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GEORGE M. GOULD, A.M., M.D.

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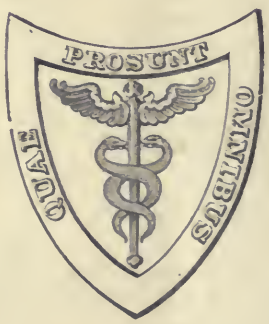

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CONTRIBUTORS

TO

VOLUME SIXTY-TWO.

A. C. Abbott, M.D., of Philadelphia.
Albert Abrams, M D., of San Francisco, Cal.
Lewis H. Adler, Jr., M.D., of Philadelphia.
N. Agnew, M.D., of Winnipeg, Manitoba.
Harrison Allen, M.D., of Philadelphia.
John L. Ancrum, M D., of Charleston, S. C.
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D. Bevan, M.D., of Philadelphia.
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A. E. Bradley, M.D., Lieut. U. S. Army, Fort Sully, S. D.
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John B. Chapin, M.D., of Philadelphia.
Solomon Solis-Cohen, M.D., of Philadelphia.
Joseph B. Cooke, M.D., of New York.
J. E. Copeland, M D., of Round Hill, Va.
S. G. Dabney. M.D., of Louisville, Ky.
J. M. DaCosta, M.D., LL.D., of Philadelphia.
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W. G. Hope, M.D., of Albuquerque, N. M.
LeRoy W. Hubbard, A.M., M.D., of New York.
Woods Hutchinson, A.M., M.D., of Des Moines, Ia.
James Nevins Hyde, A.M., M.D., of Chicago.

reported (and rightly, too) that the specimen showed nothing beyond the changes usual in inflammation. Had the growth increased and been again removed, microscopic examination would have shown clear signs of malignancy. This would have been set down as a case in which an innocent growth degenerated into a malignant one, when, in truth, it was malignant from the start.

J. Solis-Cohen, Bosworth, Gottstein, Lennox-Browne, Seiler, Fauvel, and other authorities in this branch of medicine, all state that such a change is possible, and some of them think that it frequently occurs. None, however, gives any facts to support his assertion, but, like so many other medical traditions, the statement is handed along from one to another and accepted by the latest authority on the mere assertion of those who have preceded him.

In a study of benign tumors of the mammary gland, Brandt[8] considers that malignant degeneration may take place in them, but only with extreme slowness. He considers, however, that most breast-tumors should be removed as a measure of wise precaution.

I believe, therefore, that I am warranted in saying that there is almost complete unanimity of opinion on this question among surgeons and pathologic anatomists. Those who allude to it at all, do so favorably, while the others seem to consider it as being so well accepted a fact as hardly to need mentioning. No one, so far as I have been able to learn, denies it.

Now, while that which is believed by common consent to be true has a certain weight as corroborative evidence, it is not proof, and unless we can find something stronger to sustain our case, we must rest content with the verdict "not proven."

There have been many doctrines in medicine that have been accepted as true by the entire body of the profession, which we now know to be completely false, so that it behooves us to look a little further in our search for facts.

Is there anything in the origin and growth of neoplasms, as we now understand them, that would tend to favor or negative the possibility of such a transformation as the one we are studying? The answer to this question will involve an excursion into the modern theory of tumors and tumor-growth.

The classification of new-growths most in accord with our present knowledge is the blastodermic. This is based on the fact that all the tissues and organs are developed from the three blastodermic layers, and that the tissues derived from any one layer are more or less histologically analogous. In neoplasms the analogy becomes complete and the cells revert to the type-cell of the layer from which they were derived. This enables us to classify these growths with approximate exactness. For example, if the connective-tissue cell be the predominating characteristic of the growth, then we know that we have to do with a tumor of mesoblastic origin. So, a growth composed of epithelial cells of a certain character will be referred to the epiblastic layer. Speaking in general terms, the epiblastic growths are either benign or non-metastatic; the hypoblastic are both malignant and metastatic; while the mesoblastic group contains benign and malignant, metastatic and non-metastatic tumors. I desire to call especial attention to this peculiarity of the mesoblastic group, for it is among tumors of this class that we find most of the evidences of change from benignity to malignity. In this class belong fibromas, lipomas, myxomas, chondromas, and osteomas, of the innocent growths, while all the forms of sarcoma represent the malignant types. The type-cell of all of them is the connective-tissue cell. This is their characteristic. In one form or another it occurs in all of them. The distinction between the cells of benign and malignant growths of this group is not marked. According to Wilks and Moxon,[9] it is the quality of the intermediate tissue that determines the character of the tumor as fibroma, myxoma, or sarcoma. In the simple-tissue tumors the cells are few and the inter-cellular substance greatly predominates; but when from any cause, the cells begin to be produced more rapidly and the inter-cellular substance to become more scanty, then we have a sarcoma. Thus, we see that the difference between a fibroma and a sarcoma is more one of degree than of kind. It is the opinion of these observers that "any of the previous group of tumors (fibroma, myxoma, etc.) would become sarcoma by the rapid growth of the cellular elements and deficient development of the inter-cellular matters."

Butlin,[10] in speaking of chondromas, says that bone, fibrous tissue, gland-tissue, and sarcoma-tissue, all or severally, may occur in combination with cartilage, and that sarcomas may become organized into fibrous tissue, cartilage, or bone. Ossifying and chondrifying sarcomas are sometimes taken for osteomas and chondromas, but "they remain," he says, "in effect, sarcomas, nine-tenths of whose structure has been transformed into some simple tissue, but with all the capabilities for evil which the most lowly-organized sarcomas possess."

It is a peculiarity of all neoplasms that the tissue of which they are composed is less highly organized than the normal tissues of the body. Now, bearing this fact in mind, and given a habit of body predisposing to malignant disease, is it unreasonable to suppose that this malignant tendency should show itself in a degenerate form of tissue rather than in the normal healthy tissue, particularly when both the innocent and the malignant growth are derived from

the same layer? Or, to take a concrete example, will sarcomatous degeneration be more likely to show itself in an already existing fibroma of the mamma than in the healthy gland-tissue? It seems to me not unreasonable to assume on *a priori* grounds that the malignant disease will be first shown in the more lowly-organized tissue.

One of the prime factors in determining malignant degeneration in healthy tissue is irritation. Now, it would seem that healthy tissue should resist the effects of irritation longer than unhealthy, and we should accordingly expect that if malignant change should take place in a benign growth, irritation or excitation of the tissues would have a large share in it. This is in accord with the clinical facts. In almost every case in which a benign growth has been assumed to have become malignant, the evil change has been laid at the door of irritation.

So far as we have gone, we have seen that the almost uniform testimony of surgeons and pathologists is in favor of the possibility of malignant degeneration of benign growths, and that there is nothing in the modern theory of tumor-growth inconsistent with such a change; but the medical mind of to-day cries out for facts. These are the days of skepticism in matters medical; and every theory and belief, no matter how ancient and venerated, must be tried anew by the touchstone of modern investigation. It is the main purpose of this communication to endeavor to find out whether this theory has enough facts in its favor to sustain it, or whether it must fall and be retired to the limbo of creeds outworn. The conditions of our inquiry narrow the field of investigation very materially. We must exclude all cases in which a non-malignant growth has been removed and a malignant growth has arisen in its site or in the scar. There are numerous instances of this kind on record, and any surgeon of experience could doubtless furnish one or more from his case-book.

In the second place, it is essential that the facts in each case be beyond cavil. This excludes all cases recorded before the time when the minute anatomy of neoplasms became so well understood as it is now. The time is not so very far distant when all malignant growths were called cancer. Mere clinical observation is not sufficient to determine the question of the innocence or malignancy of any particular growth.

Thirdly, the observations on which any conclusive opinion may be based should be made by those who, by reason of experience or special skill, are of such eminence as to give their opinions an questioned authority.

And, fourthly, it will not do to include cases in which an innocent growth in one part of the body is invaded by secondary deposits from a malignant neoplasm situated elsewhere. A case of this character is the one recorded by Fenwick[11], in which a small fibrous nodule surrounding the orifice of one of the ureters became invaded by secondary deposits from a carcinomatous growth in the liver and stomach.

Hampered by these restrictions, I doubted the possibility of finding in medical literature observations recorded with such care as to decide the question either one way or the other. It is proper to state here that personally I have no knowledge of any such change, and I can well understand how a surgeon of wide experience might never see such a case. In order to fulfil the conditions essential to certainty, he must be able to see the case in its very incipiency, and to follow it to its very end. Even then there might remain a doubt as to the correctness of the diagnosis. Let us suppose, for instance, that a surgeon sees a case of breast-tumor in its earliest stage, possessing none of the manifestations of a malignant growth, and having all those of an innocent glandular tumor. As time goes on, the tumor, still under his observation, begins to grow rapidly, cause pain, contract adhesions, disturb the general health, and, in short, behave so as to demand removal. The growth is removed, examined carefully, and found to possess clear elements of malignancy. Now, the surgeon is satisfied in his own mind that the growth was innocent at first, but he cannot absolutely prove it. Of course, the chances are in favor of his being right, but probability is as far as he can go. This is not a far-fetched assumption, as is shown by the case reported by Jonathan Hutchinson, Jr.[12] In 1873, a woman of fifty-four came under the care of Mr. Hutchinson, Sr., for a tumor in the left breast, which had been noticed for six months, and was then three inches in diameter. It was removed, and proved to be an encapsulated adenoma, with a few cysts. Thirteen years afterward the woman was in good health. She had a daughter who had noticed from girlhood a small round tumor beneath the skin of the left breast, which was "as large as a cherry, and did not grow." When she was forty-four years of age considerable growth took place around the tumor, and Mr. Hutchinson found a hard mass adherent to the skin. He diagnosticated scirrhus of two years' standing. The breast and axillary glands were removed. The patient was well at the end of ten years. Microscopic examination showed round-celled adenoma imbedded in scirrhus. The appearances clearly showed that the carcinoma had invaded the adenoma. In this case the element of heredity is added to the other probabilities in favor of a change from benignancy to malignancy, but it still remains only probability. Again, scirrhus might have invaded the gland had there been no adenoma there

at all. As Paget,[13] in speaking of these adenomas, fitly remarks: "On the whole, one might expect that if a woman have a tumor of this kind in her breast, cancer would be more apt to affect it as a morbid piece of gland than to affect the healthy gland."

In the report of the Middlesex Hospital for 1884 is an account of a case in which carcinoma supervened upon a multilocular cystic adenoma of thirty-four years' standing. Similar to this is the case occurring in Dr. Hartley's service in the New York Cancer Hospital, as related by Dowd.[14] Here the patient was thirty-eight years of age. When ten years old he had noticed a hard, insensitive, pea-sized tumor in his neck below the right submaxillary gland. This showed no change for fifteen years, when it became as large as a hickory-nut, but showed no other change for ten years or more, when it began to grow rapidly. It was excised twice during the following three years, and when seen in September, 1891, consisted of two lobes, each as large as a hen's egg.

In the same article is an account of another case in a woman of sixty-seven, who had had several wens in her scalp for ten years. In July, 1891, one of them became painful and tender and soon ulcerated. On removal it was found to be an epithelioma extending down to the periosteum. The other tumors were ordinary wens, as shown by microscopic examination. Shattock[15] also reports a case of cystic, squamous-celled carcinoma, arising in a sebaceous cyst of the scalp.

Taking into consideration the elements of uncertainty surrounding all merely clinical observations, it is to the pathologic anatomist rather than to the surgeon that we must look for the evidence necessary to settle this question. Can he show us a growth containing within itself, at the same time, unmistakable evidences of innocent and of malignant action, and presenting these changes in such a way as to show that the one has shaded into the other?

It is obvious that these conditions are hard to satisfy, but if only one such growth can be shown it will be sufficient to establish the fact.

In 1888, Mr. T. Charlewood Turner[16] showed to the Pathological Society of London a tumor of the size of a hazel-nut from the spinal cord of an obese woman. The left half of the growth was distintly fatty, but the right half consisted of interwoven strands of fibrous tissue, rather profusely studded with oval elongated nuclei and leukocytes—in short, sarcomatous tissue. This, at first sight, would seem to answer the conditions of our inquiry and to decide our question in the affirmative; but it is impossible to say whether the fatty change was primary or secondary. If primary we have a case fulfilling all of our conditions; if secondary, we are as far from an answer as ever. Taking into consideration the excessive fatness of the patient and the well-known fact that sarcomata not infrequently undergo fatty degeneration, the probabilities seem to be that the tumor was originally sarcoma and the fatty deposit secondary and not primary.

For many years past gynecologists have been removing from the abdomen fibroid, or, more correctly speaking, myomatous tumors. These are undoubtedly benign growths and are so accepted by all pathologists. Let us see if we can find any evidence of malignant degeneration in these growths.

Mr. Alban Doran,[17] a gynecologist of repute, reports a case of uterine myoma, in which there was beginning sarcomatous degeneration. He gives a full history of the case, with drawings of the microscopic appearances, which seem to bear out his conclusions. In a series of two hundred and five operations for the removal of fibroids of the uterus by Martin,[18] of Berlin, four of the tumors were intra-parietal encapsulated myomata, undergoing sarcomatous degeneration. Schroeder[19] states that primary degeneration of fibroid tumors into carcinomata hardly ever occurs (but one case having been reported), but that the change from a fibroid to a sarcoma is not infrequent. "We cannot as yet," he says, "determine how often this change from a benign fibroid into a malignant sarcoma takes place. There is no doubt that it may take place." He considers that the formation of the fibroid sarcoma of the parenchyma of the uterus is in some way due to the presence of a round fibromyoma or a fibrous polypus. "At any rate," he says, "it not infrequently proceeds from a degeneration of these."

The latest case is that of Ehrendorfer,[20] recently reported. This is given in full and is accompanied by a careful description of the microscopic appearances, leaving no room for reasonable doubt that the case was one of primary carcinomatous degeneration of a uterine myoma; but it is useless to present further citations. The fact seems well enough established that benign growths may undergo malignant degeneration. It is but right to say that many other gynecologists equally eminent deny the possibility of any such change, but the weight of the evidence seems to be in its favor. Such is the character of the evidence that I have to offer for and against this theory. I regret that time has not been available for a more extended search of the literature of medicine.

It seems to me that the following conclusions may legitimately be drawn:

1. That benign tumors may undergo malignant degeneration has been accepted as true by most clinical observers and pathologists.

2. That there is nothing in the modern theory of tumors and tumor-formation to contra-indicate the possibility of such a change.

3. That the facts now on record are sufficient to show that such a change may and does occur, although but rarely.

4. That the change is more frequent in growths of mesoblastic origin, and more particularly in the so-called uterine fibroids than in any other class of neoplasms.

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FRACTURE OF THE PATELLA TREATED BY CONTINUOUS EXTENSION; PATIENTS NOT CONFINED TO BED.

BY JOSEPH D. BRYANT, M.D.,
OF NEW YORK.

Two varieties of treatment of fractured patella are generally recognized, the mechanical and the operative. It is not my intention to allude to the latter method, except in a general way; nor, in fact, to the devices of the former plan except as they may be employed to illustrate the method of treatment that I present. The indications to be met in the treatment of this fracture are the stereotyped ones that are applicable to all fractures, namely, the reduction of the fragments and the holding of them in place until a proper degree of union ensues to permit of the removal of the retaining forces. In fracture of the patella the uppermost fragment is drawn upward by the influence of the quadriceps extensor muscle, while the lower is somewhat displaced downward by means of the non-muscular tissues attached to it. Ordinarily, crepitus can be easily elicited between the fragments, provided the attempt be made before the formation of the firm blood-clots that become closely connected with the broken surfaces of the bone within a few hours after fracture. The failure of the medical attendant to obtain crepitus at this time should be attributed to the presence of these clots rather than to the influence of the stretched aponeurotic tissues connected with the upper surface of the patella. The presence of these clots and their influence in separating the fragments are frequently and easily demonstrated during the operative technique of wiring the patella for fracture.

The steps necessary for the reduction are, first, the extension of the leg and elevation of the limb to secure complete relaxation of the quadriceps extensor muscle; second, the drawing together and retention of the fragments in position until some form of union insures sufficient strength to properly maintain them in place. It is hardly necessary for me to describe the various instrumental means heretofore employed to effect the reduction and retention of the fragments in this fracture. It is sufficient to say, however, that their basis-action consists in extension applied directly or indirectly to the upper fragment and the holding of the lower fragment upward in position. The extension is represented in these cases as applied to the upper fragment and to the thigh, and also to both of these parts simultaneously. It is manifest to one familiar with the relationship of the tissues composing the thigh that extension applied to the thigh alone can exercise but little other restraining influence on muscular contraction than that dependent on coaptation pressure, because the dense fascia lata intervenes between the muscles of the thigh and the integument to which the extension is applied. However, when extension-apparatus is applied to the upper fragment of the patella with sufficient firmness to meet the indication, then, indeed, some command of the quadriceps muscle is secured. But even in this instance the inequality, severity, and direction of the pressure necessarily brought against this fragment, together with the absorption of the surrounding soft parts incident to the pressure, quickly render its influence insecure and migratory, unless constant and tedious, not to say painful attention be given to the case.

In my judgment, the feature most commendable in the wiring method is this: It permits patients to move around on crutches within a few days, thereby relieving them of the tedium and depression of long confinement.

Of the mechanical appliances permitting patients to be at once about on crutches, plaster-of-Paris, applied in the form of a thigh or hip spica, extending down to cover the foot, with an oblique patella-traction arrangement of the bandage at the knee, is most often selected. With this method, even in a very few days, the limited direct-extension influence that the splint exercises on the upper fragment disappears, owing to the shrinkage of the limb, and in

part to the pressure of the splint itself. The coaptation-influence on the tissues of the thigh, exercised by the splint at the time of its application, is soon much lessened on account of the same shrinkage. I have quite often witnessed the treatment of this fracture with the plaster-of-Paris splint when little attention was paid to the tissue-changes following its application, even up to final recovery; and candor compels me to state that in these cases the results were quite as satisfactory in all respects as in cases treated more actively and with seemingly better philosophy. I have often remarked that the results of the treatment of fracture of the patella with a plaster-of-Paris spica were much more convincing of the fact of how little treatment the fracture required than of the efficiency of this particular method. However this may be, it is surely a great desideratum to employ a means that, while it holds the fragments as well as possible by mechanical measures, still subjects the patient to as little confinement as if wiring of the patella had been done. The plan that I have employed, with some interruptions, for a number of years past can be divided for the sake of simple elucidation into five separate steps.

FIG. 1.

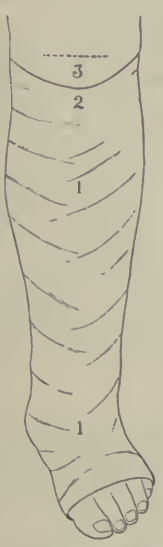


FIG. 2.

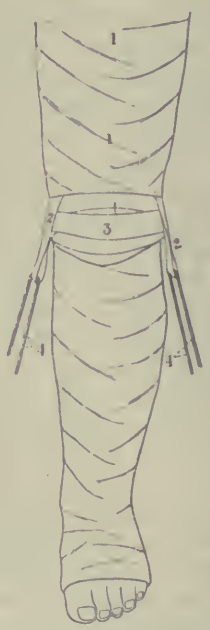


FIG. 1.—1, 1. Plaster splint as applied to leg. 2. Upper border of splint pressing lower fragment into position. 3. Lower fragment with line of fracture above.

FIG. 2.—1, 1. Extension as applied to thigh. 2, 2. Front view of extension straps. 3. Adhesive straps retaining fragments in position. 4, 4. Rubber extension made taut while adhesive straps are being applied.

First step (Fig. 1). The first step consists in the application to the leg of a plaster-of-Paris splint, extending from the base of the toes up to and partly around the lower fragment (3). The splint is firmly applied to the limb a sufficient time in advance of the succeeding steps to permit of its becoming thoroughly hardened. It is carefully rounded at the lower extremity (2), so as to press into position and hold there the lower fragment (3). Its functions can be said to be threefold: 1st. It serves to protect the foot of the patient from the pressure of the rubber extension, which acts from this part of the limb. 2d. It confines in place the lower fragment, and the pressure upward of the splint, due to the elastic force of the extension transmitted through it to the foot, retains the upper border of the splint in proper relationship to the lower fragment. At all events, any diminution of pressure on the part of the splint in this situation can be readily supplemented by the introduction of suitable pads between it and the lower fragment of the patella. 3d. It affords attachment to the lower end of the supporting rod or brace, intended to maintain complete extension of the limb while acting as a posterior support.

Second step (Fig. 2). The features of the second step are quite as strongly expressed by the illustration representing it as words can define them. This step consists in the application to the thigh of an extension-apparatus fashioned after the manner of the well-known Buck's extension, which reaches from the perineum to the upper border of the upper fragment (1, 1).

It is confined in position by the ordinary muslin roller. The adhesive element of this appliance terminates a little below the knee in a loop (2, 2) at either side, through which may be passed the rubber extending cord (4, 4), or to which may be connected hooks for the convenient attachment of the rubber cords or bands that are to pass around the bottom of the splint, and by means of which the extension is made and maintained. The broad triangular adhesive strips to which the extension loops are sewed are confined in position at the sides of the thigh by means of simple roller bandages. Moderate extension is then made on the loops by means of the rubber cords, in order to draw as far as possible downward the soft tissues of the thigh and the upper fragment of the patella. While the extension is thus being made, the roller bandage intended to hold the adhesive-plaster strips in place is covered by plaster-of-Paris rollers from the upper to the lower limits of the adhesive-plaster extension, and so fashioned as to control the upper fragment in the most serviceable manner while extension is in action. The object of this plaster-of-Paris addendum is, first, to aid in holding the primary dressing of the thigh in a firm position; second, and principally, to afford an upper support for the extending rod or splint to be placed behind the

limb, and to aid, also, in confining the upper fragment of the bone in proper relationship to its fellow, as will appear in the succeeding step.

The second step meets the following indications: First, it coaptates the tissues of the thigh, thereby exercising a controlling influence over muscular contraction, and is the agent causing extension of the integument and the subcutaneous tissue. Second, it makes direct extension of the quadriceps through its firm application to the upper fragment of the fractured bone and the tissues immediately above and around it.

Third step. This step consists in strapping the fragments of the patella in such a manner as to draw them well together and properly maintain them in position. These strips of plaster (3, Fig. 2) are fastened in position behind to a wooden support or brace, about two inches in width, one inch in thickness, and extending from near the upper

FIG. 3.

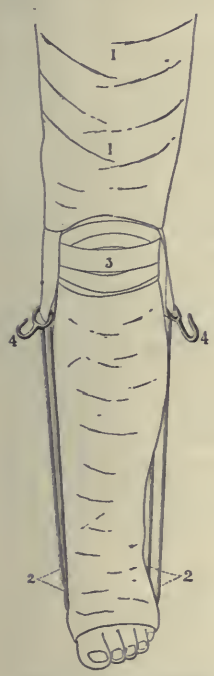


FIG. 4.

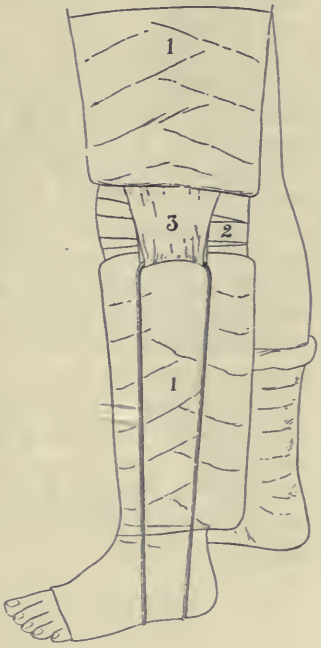


FIG. 3.—1, 1. Plaster bandage applied around thigh extension. 2, 2. Rubber extension in position and action. 3. Patella-retaining straps. 4, 4. Hooks for rubber extension bands.

FIG. 4.—1, 1. Upper and lower segments of interrupted splint. 2. Posterior support of splint covered by retaining straps. 3. Side view of extension strap.

border of the thigh portion of the splint to the lower part of the splint surrounding the leg. These adhesive strips should be applied cautiously, so as not to irritate the integument, and also to prevent either of them from being drawn downward between the fragments of the broken bone. If this accident happens, greater separation of the fragments ensues, and union of a serviceable kind is much delayed, and may be defeated. These strips can be applied with greater care, convenience, and effectiveness, if traction be made away from the median line of the thigh, as represented in Fig. 2 (4, 4).

Fourth step (Fig. 4). This consists in fastening the posterior support or brace (2) in proper position, and fixing it there by means of plaster-of-Paris rollers carried around it and the upper and lower segments of the splint where they lie in contact with each other. These bandages harden quickly, and thus incorporate the posterior support firmly with their structure, forming an interrupted plaster-of-Paris splint, with a posterior connecting brace (1, 1, 2). The interval at 2 shows this brace with the patellar adhesive straps attached, by means of which the strips are retained in position.

Fifth step (Fig. 4). The posterior support in this illustration is unusually thick (2), being composed of wood. A small iron rod on each side of the posterior surface of the limb will answer much better for many reasons, and is less cumbersome. However, this one illustrates sufficiently well the importance of the posterior support, and better, perhaps, than a less conspicuous object. Fig. 4 shows the posterior support as placed against the posterior surfaces of the plaster splints previously described, and confined there by fresh plaster rollers. This should be accomplished while the extension force is in action. These bandages are represented as carried around the limb from the extremities of the support to the contiguous borders of the underlying plaster splints. As already mentioned, the hardening of these newly applied bandages incorporates the posterior support with the plaster-of-Paris structure so firmly that an unyielding common apparatus is formed. The object of this support is obvious to anyone. It serves to keep the limb extended, thus preventing undue traction on the fragment of the quadriceps muscle, and it affords attachment to the adhesive plasters that confine the fragments of the patella in proper position. Leather collars, properly fashioned and padded, passing around the limb above and below the patella, and drawn firmly toward each other by means of leather straps, as figured in the text-books, may be employed instead of this method of strapping. In either instance the hamstring tendons should be carefully protected from undue pressure by the interposition of some soft suitable material. After the apparatus is completely and suitably applied, the patient may be permitted to walk around, but the limb during this time should be flexed somewhat on the trunk by means of a long sling extending from the foot, which it supports, and carried over the neck of the patient. The employment of this expedient will flex the entire limb considerably on the trunk, and thereby cause greater relaxation

of the quadriceps extensor muscle, and also obviate the influence on the upper fragment of the involuntary contraction of the muscles that are associated in the effort of locomotion.

THE ADVANTAGES OF THIS APPLIANCE.

The following advantages appear to me to be quite clearly defined:

1. It apposes the fragments of the patella from the first as well as any other non-operative appliance can accomplish this purpose.

2. It maintains them in position better than any mechanical means yet employed, unless the patient be confined in bed and a constant and tedious scrutiny be exercised by the physician in charge.

3. It permits the patient to be up and around sooner and more comfortably than any non-operative method of treatment yet employed.

I have thus far treated nine cases by this method, with results equal to those of any other non-operative method, and with much more comfort to the patients. Like all methods, this one, too, has its fallacies. It is important to regulate the degree of elastic extension in accordance with the requirements of each particular case. If greater extension be employed than is essential, the straps by means of which the extension is secured may be torn or drawn away from their fastenings. At all events, great discomfort will be caused. It is proper to say, however, that a degree of extension may be employed which will be readily withstood by the straps at the earlier period of their application, which is out of all proportion to the requirements of the case, and at a later period would promptly cause slipping of the adhesive straps. In one instance, as a matter of experiment alone, I applied a degree of elastic traction to a case equivalent to forty pounds. It may be thought, perhaps, that the application around the thigh of the plaster-of-Paris casing, and introduction of the posterior support connecting the two portions of the splint, will interfere with the extension influence applied to the thigh itself. This, however, is not the case, as the extension acts independently of the incasing plaster, while at the same time the incasing plaster serves to confine the adhesive strips properly in position. If the interval between the plaster splints corresponding to the knee and popliteal space be not thoroughly and carefully covered, either with straps, cotton, or bandages, pain and edema will, for obvious reasons, take place there.

After the adhesive strips are properly applied to the patella, the intervals between the splints, behind and in front, should be filled in with layers of absorbent or other kind of cotton, and bandaged closely in place. At the time the posterior support is placed in position, cotton or other suitable material for exercising moderate pressure should be interposed between it and the posterior surface of the knee, already the patella-retaining straps are applied, as then this material can be drawn firmly into place. As before remarked, the fragments should be carefully and properly strapped, and great care exercised in the application of the straps, else one of them may be drawn between the fragments, and before its discovery may cause greater separation and interfere with the union.

Finally, it is necessary that the plaster splints should be kept firmly apposed to the underlying surfaces, which, of course necessitates their being cut up quite soon after their application. The cutting up can be easily done by means of an ordinary knife after the manner usually employed in other forms of splints of a similar nature. If a proper portion of the splint be removed in the line of incision, the splint can then be firmly drawn in place around the limb by means of an ordinary muslin roller.

In presenting to your consideration this method of treatment of fractures of the patella, I do not claim any originality as to the application of extending force in this manner to the thigh, as I recall distinctly having seen, while an interne in Bellevue Hospital in 1870, a similar extension applied to the thigh for fracture of the patella by Dr. Stephen Smith. However, in that instance the patient was kept in bed, and no effort was made to control the lower fragment by means of a plaster splint or by the influence of the extension employed in making traction upon the upper fragment. I have not, however, as yet seen or learned of the treatment of fracture of the patella by a method in any way contemplating the use of extending influence associated only with the limb itself, the introduction of a posterior stiffening support, and non-confinement of the patient in bed.

THE DISPOSAL OF SEWAGE.

BY D. BEVAN, M.D.,
INSTRUCTOR IN HYGIENE AND CLINICAL MICROSCOPY IN JEFFERSON MEDICAL COLLEGE; BACTERIOLOGIST TO ST. AGNES'S HOSPITAL.

THE question as to the disposal of human excrement has agitated the mind of man from time immemorial. The earliest authenticated record we have of laws regulating the disposal of excreta is in the injunction laid upon the Israelites to so fashion their spears that they might dig holes in the earth and therein bury their dejecta. The Israelites being at this time a nomadic people, and the country but sparsely settled, such a method was without serious objections. With the establishment of permanent camps and cities, however, the people were compelled to devise other means.

In the earlier ages, and also at the present time in remote places, privies built on the ground-level over shallow holes or barrels, etc., sunk in the ground were deemed sufficient. These muck-heaps were often situated in close proximity to dwellings and the sources of water-supply. The solid portion was seldom removed, but accumulated, and formed a vast pest-heap, which, when it was decided to clear it away, was quickly disposed of in the most convenient water-course, though occasionally it was used for fertilization. The liquid portion, containing noxious organic and inorganic substances in solution, percolated through the soil, polluting the source of water-supply and vitiating the air passing through the ground into the house. With the enlightenment of the people and renunciation of the abject servility imposed by political demagogues and hierarchies, science, deprived of right and destitute of prerogatives, was importuned to relieve the nation of its stink, to check and annihilate the filth-diseases rampant throughout the civilized world. Sanitary science, thus fostered and encouraged, responded nobly and has now discovered processes whereby sewage may be purified and utilized without seriously jeopardizing public health.

In this article only the discussion of the most important methods will be taken up. These include (1) the precipitating process; (2) the filtration process, and (3) irrigation.

The objective point in precipitating processes is the separation of the solid constituents from the liquid portion and rendering the effluent pure, or at least innocuous.

Two methods are practised to attain this result: (1) By simple subsidence, and (2) precipitation with chemicals.

By the first procedure the sewage is directed through wire screens into tanks provided with overflow tubes. The sewage remains in the tank for a time sufficient to separate the fluid from the solids. The effluent is drawn off through the overflow tubes and the sludge removed and burned or sold for fertilization. The liquid is allowed to flow into the most convenient water-course. As chemical analysis has demonstrated that this liquid is but little improved by subsidence, this process has been given up for a more efficient one: The effluent is passed through perforated drains from one to one and a half feet under the ground-surface and allowed to escape into the subsoil. This method is, however, applicable only for single houses and small communities.

Precipitation by chemical agents. By the admixture of certain chemicals the suspended and a considerable amount of the dissolved matter is precipitated. The sewage should be treated while in a fresh condition and the chemicals added before it is discharged into the receiving tanks or reservoir. These tanks are arranged in duplicate series, their number depending upon the amount of sewage to be treated.

The chemicals from which the best results have been obtained are lime, aluminium sulphate, and ferric sulphate, used separately or in combination. After precipitation, although the effluent is clarified, it is not innocuous, and to complete the purification it is expedient to combine the filtration with the precipitating process.

The filtration processes are effected by straining the sewage through substances having the faculty of arresting the solids and purifying the effluent. In some instances the sewage is simply strained through gravel or coarse sand. By this method the suspended particles are arrested, but the effluent is not purified. Carbon has been employed, but has proved unsatisfactory. Of all filtration processes, intermittent downward filtration through earth most completely purifies sewage. The degree of efficiency depends upon (1) the porosity of the soil, (2) the fall of the land. There should be one cubic yard for each eight gallons delivered in twenty-four hours. It is computed that one acre of ground will take up 100,000 gallons of sewage in twenty-four hours. To further facilitate the filtration of sewage, it should be delivered in pipes at least six feet under the surface. The filtration surface should be divided into four sections, and no one section should receive sewage for more than six consecutive hours. The surface of the plot should be ploughed in ridges on which vegetables are grown.

In England, irrigation, combined with either filtration or precipitation, has been pronounced the most efficient and profitable process for the utilization of sewage. The ground selected for the farm should be porous, light loamy soil. The farms are arranged in ridges along the tops of which run trenches carrying the sewage. The sewage is discharged at regular intervals, through series of sluiceways, into furrows. On the ridges are grown Italian rye, grass, peas, maize, cabbages, cereals, etc. The suspended organic matters are arrested in the soil and oxidized or resolved into harmless compounds by the organisms there present. The dissolved organic substances furnish pabulum for the growing vegetation.

This country, with its cities environed by extensive agricultural districts, affords the most happy and natural facilities for the employment of sewage.

A modification of the foregoing process might be adopted with profit to a municipality and the advantage of enriched lands and augmented crops to the agriculturist.

The sewage of the city of Philadelphia is disposed of in two ways: (1) By the sewers emptying

into the Delaware and Schuylkill Rivers, and (2) by being conveyed to the "Neck,"[1] where it is discharged upon the lowlands.

By the first process, our rivers (the sources of the city's water-supply) receive directly and undiluted the pestilential sewage of the city and the noisome refuse of the manufactories situated along their banks.

The rivers are thus practically converted into immense sewers, and the peculiar, delectable flavor of this mixture has conferred upon Philadelphia a most invidious distinction.

In the second method, the sewage is conveyed to the dumping-grounds in tank wagons, where it is transferred to sprinklers and promiscuously distributed in the furrows, over the vegetables, here, there and everywhere. The dumping-grounds ultimately become the most foul and noisome marshes conceivable. Not satisfied with begriming Nature's sweet face with the filthiest of filth, these philanthropic individuals turn their cattle into these muck-fields to pasture.

Though the effects of this latter method are not so widespread, its baneful influences are terribly obvious in the southern section of the city, and particularly in the southeastern section; for it is here that the milkman of the "Neck" carries a pail in one hand from which he dispenses elaborated garbage (so-called milk), tinctured with sewage, and in the other a bucket in which he collects the crude article. Is it surprising, then, that this method should be considered not less objectionable than the first?

The pail system adopted by Rochdale, Nottingham, Halifax, Manchester, Leeds, and Birmingham, deserves passing notice. The "by-laws" require (1) specially constructed closets, and (2) suitable pails.

The floor of the closet, made of some impermeable material, is raised several inches above the ground-level, with a slope of one-half inch to the foot toward the door. It is well ventilated by a six-inch shaft extending from beneath the seat to above the roof. The seats are hinged in order that the pails may be readily removed. The pails are made of wood and coated with creasote, or tar and galvanized iron. They should be round, with flanged tops and have a capacity not exceeding eight cubic feet. An airtight-fitting lid is provided to prevent nuisance in removal. In use they are placed in juxtaposition with the seat. Some of the cities mentioned have a second pail for the reception of ashes, house-refuse, etc.

Feces, having been discharged into the pail, are sprinkled over with finely sifted ashes or soil, which act as deodorants.

[1] The territory in the county of Philadelphia lying between the Delaware and Schuylkill Rivers and south of Snyder avenue.

Where the pail system is in operation the sewage is burned in furnaces, or by the addition of finely sifted ashes and lime converted into fertilizing material.

We think it not inopportune to conclude by mentioning the method adopted in London. The sewage is conducted by the main sewers to Barking and Crossness. Large works have been completed at Barking, and similar works are in process of construction at Crossness, for separating the grosser element. Before the sewage enters the works it is strained through iron cages which retain the larger bodies. This, amounting in one week to seventy tons, is incinerated in a Hoffman furnace. The liquid, having in suspension the finer particles and a considerable quantity of dissolved organic matter, is directed into large tanks for subsidence, which is facilitated by the addition of lime, thirty-seven grains, and iron sulphate, fourteen grains, to each gallon of sewage. In this manner twenty thousand tons are precipitated in one week. The sludge is forced by powerful pumps into tanks on board ships expressly constructed for the purpose. The ships, having a capacity of one thousand tons, convey the sludge to sea, where it is discharged. The effluent, containing but two grains of solid per gallon, disembogues into the Thames.

The abandonment of this process is but a question of time, for it is manifest that such enormous quantities of sludge will eventually so silt up the estuary of the Thames as to seriously interfere with commerce; and, indeed, may prove a grave source of pollution.

CLINICAL MEMORANDA.

A CASE OF PURPURA HEMORRHAGICA.

BY WM. R EARECKSON, M.D.,
OF ELK RIDGE, MD.

ON Sunday, July 3d, I was called to see James F., Jr., nine months old, who was suffering from an attack of cholera infantum. His previous health had been good. His father is a robust man, while his mother looks tuberculous, although no pulmonary trouble can be detected. There was one other child, an extremely plump and healthy sister. The grandparents are all living, and perfectly well, except the paternal grandfather, the nature of whose trouble I could not ascertain. The cholera infantum yielded readily to treatment, and in about ten days was completely cured. Directions were given that sterilized milk be used and the child be kept in the open air.

On July 20th, I was again called to see the patient, who was said to have broken out with a rash. I found a deep scarlet flush on the left side of the face, covering the forehead to the middle line, extending down the nose, lips, and chin to a point about midway between the mental prominence and thyroid cartilage. Thence the line of redness followed closely the position of the digastric

muscle, and up in front of the ear along the course of the external carotid and temporal arteries.

There was no distinct rash, but simply a diffused redness, such as is sometimes seen from vasomotor disturbance.

The right side of the face was normal in appearance. I explained this localized flush by supposing that the left side of the face had been exposed to the glare of the sun, while the child lay in its cradle, the weather at the time being intensely hot. The hands and limbs, however, were normal, although equally exposed. The axillary temperature was 99.8° F., the pulse 112, and the child cried if lifted about, as though there was hyperesthesia of the skin. There was no sore-throat or other symptom to account for the condition. I ordered a simple mixture containing liquor ammonii acetatis, ℥xv to ʒj, every three hours. When I called on the following morning (July 21st) I found that the left cheek was almost normal in color, but presenting several little spots of eruption such as seen in measles, while the right cheek was almost as flushed as the left had been, the redness, however, not being so decidedly circumscribed.

The treatment was continued. The kidneys and bowels acted normally, and except for this flush and slight elevation of temperature I could detect nothing abnormal. The child, however, was fretful, and cried if lifted from his cradle. I ordered plenty of nourishment, fresh air, and stimulants at regular intervals.

On July 22d, I found very little flush, but on both cheeks there were a few spots of eruption similar in size to those of measles. These were confined exclusively to the face, but the wrists and legs, from about two inches above the knees, were rather more deeply colored than normally. The bowels moved three times, the evacuations being thin, but normal in color.

The condition was so much improved that I did not visit the child again until the morning of July 26th. I found the temperature slightly elevated, and the pulse rapid and weak.

In the afternoon, at about 5 P.M. I was stopped, while passing the house, and asked to see the child again, as it was bleeding. Its mother told me that at about 10 A.M. she noticed a purple spot, about the size of a flaxseed, on the right cheek, just below the angle of the mouth, which gradually grew to about the size of a five-cent piece. In turning over in bed, the child scratched this spot on the pillow. From that time until about 4 P.M. it bled constantly. The bleeding was stopped, finally, by means of hot water and pressure.

On close examination, I found about one hundred small red specks, about the size of pin-heads, scattered over the face and neck, and a few on the abdomen and thighs. On the legs, feet, wrists, and hands one could scarcely see any healthy skin, on account of the numerous red spots.

The trouble was then recognized to be purpura hemorrhagica or morbus maculosus of Werlhoff, and the parents were informed of the possible fatality of the condition. Aromatic sulphuric acid was ordered, together with a generous amount of diet and stimulant.

That night epistaxis began and continued, until, after milder astringents were found useless, I gave a spray containing subsulphate of iron and increased the amount of acid.

The temperature then was 100.4° F., and the pulse 122. The child was fretful and cried when disturbed. A slight enlargement of the spleen was noticed and slight tenderness was manifest on pressure.

During the day of July 25th, the child vomited a moderate quantity of dark blood, and the acts of vomiting started epistaxis again. An emulsion containing oleum terebinthinæ was ordered.

The pulse was markedly thready and weak, while the temperature remained about as previously. Epistaxis was controlled by nothing except the spray of Monsel's solution.

From July 29th to 31st, inclusive, the amount of blood vomited daily increased, as did also the frequency of vomiting. Epistaxis was, however, not quite so severe. The petechiæ increased in number, especially upon the abdomen, thighs and upper arms, but did not show any tendency to increase in size. The urine became deeply colored and stained the napkins a reddish-yellow, but the quantity was apparently normal. The stools were liquid and contained no blood. The spleen was perceptibly enlarged and slightly tender. Not being satisfied with the effect of the turpentine, although the quantity was carefully increased daily, the fluid extract of ergot was ordered in fairly large doses. The pulse-rate ranged from 120 to 132, while the temperature was from 99.6° to 100.2° F.

From August 1st to 5th, the acts of vomiting were less frequent, and the amount of blood diminished. Epistaxis was very slight. No blood was seen in the stools, but the urine still stained the napkins. On August 2d, large blisters containing serum were first noticed upon the right cheek where the cutaneous bleeding occurred, and by the next day the same condition was present on the dorsum of the feet and hands. By this time the skin was very pallid, especially on the face. Several times during these five days the child showed signs of brain-irritation—threw its head back, and rolled it about on the pillow. The ergot was continued.

On the morning of August 5th, the child was apparently stronger. The hemorrhage from the stomach was very slight, and only a slight, yellowish discharge from the nose was noticed.

Stimulants and nourishment were given regularly. Ergot was continued. That night, the father called me up, saying that the little sufferer was dying. Hemorrhage from the stomach and nose had started afresh; there were moist râles all over both lungs, and respiration was accelerated. The skin was peeling from the child's face, hands, and feet. The whole skin from the top of the right foot peeled off in one large piece. Increased doses of ergot, whiskey and milk were ordered. Ice was also given, while artificial heat was supplied by means of hot bottles.

On August 6th, the whole body was extremely pale. The spleen was enlarged. The bowels were moved only three times within the preceding twenty-four hours; the stools were watery. The hemorrhage diminished. The urine was about normal in quantity, but stained the napkins. The pulse was 142 per minute, and quite compressible. The temperature was 99° in the morning, and 98.8° F. in the afternoon. The weather was extremely warm and the child was much prostrated.

From August 7th, there was no further hemorrhage.

The temperature was 98°; the pulse 146, and very weak. The extremities were cool. Stimulating measures were kept up, and hot bottles were used.

On August 8th and 9th the child was apparently stronger and noticed those about it. The urine stained the napkins less than formerly. The pulse was from 150 to 158, the temperature 98°. The parents were apprised of the approaching end.

On August 10th, the moist râles continued. Respiration was rapid and shallow. The temperature was 100.6°, the pulse 154. The baby was apparently unconscious. The extremities were cold and marble-white, except for the small, brownish, hemorrhagic specks. Hot bottles and stimulants were used more often. The head was repeatedly thrown back and rolled about on the pillow. During the middle of the day this condition gradually gave way to coma, and at 3 P.M. death came.

The mother has since been delivered of a female child which had considerable umbilical hemorrhage.

This case was intetesting to me on account of (1) the long prodromic period, during which no decided symptoms appeared; (2) the cutaneous hemorrhage and very marked desquamation at the site of greatest cutaneous hemorrhage; (3) the diversity of marked symptoms after the full development of the disease. consisting of hemorrhage from not only the nose and stomach, but probably also from the bronchial mucous membrane and into the brain.

No autopsy was permitted.

TO PREVENT LACERATIONS OF THE PERINEUM BY THE SHOULDER.

BY ALICE MACLEAN ROSS, M.D.,
OF SWATOW, CHINA.

So much has been said regarding ruptured perineum that I feel reluctant about bringing the subject again forward, but in the matter of prevention, I feel sure that not enough has been said in regard to tearing by the shoulder. After great care has been taken, and every precaution exercised to prevent laceration by the head, and one is congratulating himself upon having managed matters so that the patient has escaped with perhaps nothing but a little nick in the fourchette, a final terrific pain drives the lower shoulder straight through the perineal body, and perhaps makes a rupture clear through into the rectum. An internal parting of the mucous membrane of the vagina, or a slight tear, is often thus converted into an extensive laceration. The matter of preventing tears is certainly not complete without regarding the shoulder as a pretty frequent cause and directing some attention toward preventing the continuity of the perineal body being dissolved by it. If the head has been successfully delivered, it is well to look out for the shoulder.

The indications to be met in accomplishing the safe birth of the shoulders are these:

1. Direct the body upward into the axis of the outlet.
2. Lessen the transverse diameter of the body of the child.
3. Cause the exit of the body to take place slowly and gently.

When the mother is lying in the dorsal position the weight of the child's head, after it has emerged from the vagina, tends to drag the body downward and outward through the perineum, instead of outward, upward, and past it, as it should go. So the head ought to be supported, and the body directed upward in its outward passage. The transverse diameter of the body of the child may be easily lessened to a considerable extent by pressing upon the perineum and driving the upper shoulder against the pubic bone, thus doubling both shoulders over the chest.

The slow exit of the body may be brought about by pressing upon the head and retarding its motion during the pain that expels the body. But the pain that brings the body is usually a pretty violent one, and the movements of the neck prevent perfect control being obtained of the child, and notwithstanding all these precautionary measures the slippery parts are likely to ge from under the hand, and the damage is done in spite of all efforts. After delivering the head safely, I have been disappointed in the most aggravating way by finding that the shoulder has caused a tear, and have recently dropped into performing a maneuver which might be called the "cork and bottle" maneuver, as its motions are exactly like those undertaken in extracting a cork from a bottle with a corkscrew. I have found it exceedingly useful in extracting the body, after delivering the head with forceps, and in delivering the shoulders when laceration by them seems imminent, either on account of a rigid perineum, a partial parting tear of the fourchette, or the appearance of bright blood on the child's face, denoting an internal parting of the mucous membrane. It fulfils all the indications for safe delivery, and in my hands has been successful in enabling me to avoid tears by the shoulders. The maneuver is carried out as follows: First grasp the child's head by hooking the first and second fingers around the neck and allowing the chin to rest in the palm of the hand (the presentation being normal). Perfect control of both body and head is gained in this way and the child's advance can be either retarded or accelerated at will. With the other hand grasp the bulging perineum and make firm pressure upward, pressing the upper shoulder against the pubic bone, and lessening the transverse diameter of the child's chest. Then delivery may be safely accomplished by pulling upward upon the head in the direction of the outlet, gently and steadily. The whole act may be accomplished in a moment, the usual interval which intervenes between delivery of the head and body allowing ample time for its performance.

A CASE ILLUSTRATING THE TREATMENT OF PAINFUL PROLAPSED OVARIES IN YOUNG GIRLS.[1]

BY G. BETTON MASSEY, M.D.,
OF PHILADELPHIA.

The case that I herewith report is illustrative of the treatment of painful prolapsed ovaries in young girls. The previous history of the case will also suggest a possible way in which vaginal ovaries can become prolapsed and painful without traumatism.

[1] Reported at a meeting of the Philadelphia Obstetrical Society, December 1, 1892.

The patient is a young lady of a sensitive literary family, with an introspective bent. She menstruated early, and, like many young girls, had painful periods. She was ill-developed physically, and the periods were irregular. With the ultra-mechanical ideas of the present, her physician sent her to a surgeon for treatment. The surgeon is said to have diagnosticated endometritis and uterine prolapse of moderate degree, and he inserted a pessary. Therein, I am sure, lies the cause of the subsequent prolapse and hyperesthesia of the ovary.

She was sent home, some distance from the office of the surgeon, but the pain was not relieved. Before the pessary had been worn long it was removed by the attending physician, but not before there was aggravation of the preëxisting condition, which I now suppose was one of those minor endometrial catarrhs so common in patients of the class to which the girl belongs. The case went from bad to worse, and there were numerous consultations with physicians and surgeons, and removal of the ovaries and tubes was advised by several.

When seen by me, three years after the inception of the trouble, she was twenty-one years old. The uterus was in a condition of catarrhal inflammation, enlarged and tender. The ovaries (particularly the left) were prolapsed and very tender, although not enlarged. The position and the painful condition of the ovary were, I conceive, the factors that had led so many surgeons to advise the unsexing of this young lady, and according to accepted teachings this advice was warranted. I looked on the case, however, as primarily one of uterine disease, having had added to it the ovarian trouble and the general neurasthenia from which she suffered.

In brief, this patient was placed on electric treatment and rest for the neurasthenia, and was subjected to vaginal treatment by the galvanic current with a covered positive electrode. Great amelioration of the tenderness of the left ovary followed. Up to this time, a period of some weeks, the uterus had not been explored, but owing to the copious catarrhal discharge I thought it well to pass a flexible aseptic sound, which may be done with less danger of injury than if the rigid instrument be used. The uterus was found to be over three inches in depth, showing a source of trouble beyond the ovarian displacement. She was then put on the direct treatment for the endometrial inflammation, intra-uterine galvanic and faradic currents, care being taken not to bruise the sensitive tissues outside of the uterus by any undue movements. From the first internal treatment improvement was noted, the continuous pain in the left ovarian region being somewhat relieved. The following period was much easier, and she went on to a rapid recovery after a treatment of two or three months. She was discharged cured from my sanatorium five months ago, and recent advices state that she is entirely well, natural in her periods, and gaining flesh.

It may be asked: What became of the ovary that was destined to be removed? It still remains somewhat lower than its fellow, but floating freely; and I think that the slight deviation in position will not cause any more trouble than a like freedom of movement in any of the internal organs.

IRRITATION FROM THE LOCAL USE OF IODOFORM.

BY J. ABBOTT CANTRELL, M.D.,
ADJUNCT PROFESSOR OF DERMATOLOGY IN THE PHILADELPHIA POLYCLINIC; DERMATOLOGIST TO THE PHILADELPHIA HOSPITAL, AND TO ST. AGNES'S HOSPITAL.

THE pain and discomfort following the application of iodoform to raw surfaces has caused me to abandon the use of this agent in this way. I prefer to use one of the blander and less irritating iodine-compounds that have lately been brought forward, such as iodol or aristol. I have lately noticed reports in some of our journals of marked irritating effects from the local employment of iodoform.

Within the past few weeks I have seen several cases in which the effects of this drug have been actually caustic. The two herewith reported are striking examples.

CASE I.—J. M., a male, thirty-three years old, had had an abscess on the outer side of the left leg, about two inches above the malleolus, which was incised and dusted with iodoform and bandaged.

In about five days he presented himself to me with a most painful leg, which upon examination showed an area of ulceration about the size of a silver quarter-dollar at the site of the recently-opened abscess, and surrounding this for a radius of quite three inches was a decidedly irritated and inflamed surface, covered with numerous minute ulcerations, each one of which in itself resembling an ulcer and discharging a small quantity of pus. My first thought was of traumatic erysipelas, when upon careful questioning the facts related were elicited. The temperature at this time was 98.8°.

The man could hardly walk, and the little he did was exceedingly painful.

He was ordered a solution of ichthyol in water (ʒij to fʒiv); to be followed in a few days by an ointment containing hydrargyri chloridum mite, gr. xv; unguentum zinci oxidi, ʒj, and recovery speedily ensued.

CASE II.—L. B., a male, thirty-two years old, presented himself with a painful patch about four inches in diameter directly over the left patella, stating that he had fallen and bruised the parts, causing an abrasion of the skin. He was advised by his family to dust the parts with iodoform, and in addition he covered them with a zinc ointment. In about three days his knee was greatly swollen and highly inflamed, the whole patch being covered with a number of minute ulcerations, similar to those mentioned in the other case. The man presented himself after a severe drenching in the rain, and the appearances were more decidely erysipelatous than in the first case. There was no elevation of temperature.

The man was given an ichthyol lotion, followed in a few days by the following: Picis liquid., sulphuris sublimat., āā ʒss; ungt. zinci oxidi, ʒj, which was applied twice a day. In about two days he was almost well.

Of course, the report of these two cases is not evidence of the absolute inutility of iodoform, but it indicates that we cannot be too careful in its use.

For myself I shall not use it as long as there are other remedies that may produce as good results without unpleasant irritation. I believe that iodol and aristol are the iodine-compounds upon which we can safely depend.

Iodoform has proved itself of great value in antiseptic surgery, but its irritating qualities must not be overlooked.

LARGE DOSES OF NITRO-GLYCERIN.

BY G. A. HIMMELSBACH, M.D.,
LATE RESIDENT PHYSICIAN, GENERAL HOSPITAL, BUFFALO, N. Y.

THE following report is simply intended to show to what extent a drug-tolerance can be established.

A. L. P., fifty years old, a miller, entered the Buffalo General Hospital February 20, 1892. Until seven years ago he was a strong, vigorous man, when he was seized with sharp pain in the precordial region, lasting but a few seconds. Similar attacks occurred several times during the succeeding two years. The paroxyms then came on at shorter intervals and with increased severity. The case was diagnosticated as one of angina pectoris, and nitro-glycerin was given; gr. $\frac{1}{100}$ was at first found to be too large, so that gr. $\frac{1}{400}$ was given. This would lessen the severity of the attack very appreciably, and for a long time the dose was sufficiently large to bring about relief. For five years the attacks continued, and for their relief the man depended solely upon nitro-glycerin, the dosage of course keeping pace with the increased frequency and severity of the paroxysms.

When I first saw the patient he was having attacks at intervals of from twenty minutes to two hours, and each one seemed to be more intense than the preceding one; each lasted from five to thirty seconds or more. Several times during severe paroxysms a pronounced systolic murmur could be distinctly heard fully four feet from the patient, for a period of from fifteen to thirty seconds, which would gradually become fainter until it could only be heard by auscultation.

During these seven years of suffering the patient had learned to anticipate the paroxysms some two minutes in advance of their onset, when he would resort to nitro-glycerin, which would lessen or dispel the attack like "magic."

The patient informed me that he was in the habit of taking no less than from six to ten gr. $\frac{1}{100}$ triturates, *ad libitum*, as a prophylactic dose. At times even this amount was not sufficient, from fifteen to twenty being required. I finally substituted gr. $\frac{1}{50}$ triturates and kept strict account of the number. The total amount taken ranged from eighty to one hundred and ten each day. This gradually increased until he took a total of one hundred and twenty-five gr. $\frac{1}{50}$ triturates in twenty-two hours; then for the eight succeeding days he took exactly *one thousand* gr. $\frac{1}{50}$ triturates, or a total of gr. xx. At about this time Dr. Stockton suggested the use of oxygen. Accordingly, nitrous oxide and oxygen, in the proportion of 1 to 4, were administered at regular intervals and at the approach of a paroxysm. This measure was the most effectual of any yet tried. By this means the glonoin was reduced to a minimum and the patient suffered comparatively little pain. He continued in this condition for one week, when he decided to go home, having acquired the technique of administering the gas. Brandy ℥ij, several times daily, seemed to be the only means of inducing restful sleep.

Potassium iodide was given, but subsequently withdrawn, on account of diarrhea. Many other remedies strongly recommended for angina pectoris were tried, but proved of little efficacy.

The patient died a week or so after reaching home. No autopsy was permitted.

33 TWELFTH STREET.

NEW DEVICES.

COMBINED TONSILLOTOME AND UVULATOME.[1]

BY JOHN L. ANCRUM, M.D.,
OF CHARLESTON, S. C

HAVING been long convinced that many cases of post-nasal disease were aggravated, if not primarily caused by scrofulous or other chronic hypertrophy of the tonsils, it has uniformly been my practice for many years to excise them promptly, whenever hypertrophy existed to such degree as to be plainly evident, or in even a minor degree to interfere with the easy and natural breathing of the subject.

FIG. 1.

Early operation in these cases eliminates the only, and, I may say, much magnified danger from hemorrhage, inasmuch as the bloodvessels of the tonsil in its normal condition are largely venous, and the arterial vessels very small and limited. We thus anticipate their possible enlargement, which, except in constitutional bleeders, is a minor consideration, as they never enlarge to any appreciable or dangerous extent.

While the numerous tonsillotomes now in use are ingenious in construction, and fairly efficient, they all retain the two objectionable features in the compulsory use of both hands in manipulating them, and the additional difficulty in the short fulcrum and long leverage of keeping them with certainty in any fixed position when the knife is being drawn. This has induced me to combine some of the several original designs into a single-handed instrument, uniting the qualities of a tonsillotome and uvulatome in one, as nearly perfect as it is possible to be, thanks to the skill and workmanship of Messrs. Tiemann & Co., of New York.

As will be seen by reference to the drawing (Fig. 1) the instrument has a concealed spring within the rubber handle; the knife, when brought into position for operation by pressure upon the bulb, closes the spring down and is held by an automatic catch. The tonsil being surrounded by the loop, the dart (which is intended to prevent the excised portion from falling into the larynx) is quickly pushed down by the thumb-piece, and, upon reaching the proper point releases the catch, when the knife flies upward instantaneously, and

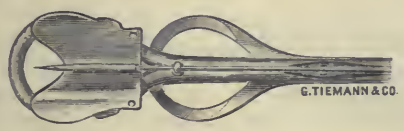
[1] Presented to the South Carolina Medical Society.

painlessly removes the tonsil, the patient scarcely realizing that the operation is done.

By the local application of a solution of cocaine the excision is so entirely painless that, practically, nervous persons (who furnish the most numerous subjects) can be deceived by the idea that no cutting has been done, and the opposite tonsil can be removed under the deception, when, otherwise, as often happens on the use of other instruments, it is not easy, or even possible, to persuade them to have the operation repeated.

By a simple device the same instrument is converted into a uvulatome of equal efficiency (Fig. 2); a light

FIG. 2.



metal disc is slid upon the dart; the edematous or elongated uvula is allowed to fall into the opening, and the dart, being pressed forward, carries the disc into the uvula before it until sufficient resistance is offered, when it stops and holds the uvula steadily while the dart passes onward through the uvula and releases the knife as before, and instantaneously excises as much or as little as the surgeon chooses to have passed the dart through.

ALUMINUM WIRE PESSARIES. (WOOL-WRAPPED).

BY J. M. KEATING, M.D.,
OF COLORADO SPRINGS.

WHATEVER may be the opinion of some extreme gynecologists, probably the pessary, in some form or another, will continue to be used with success by the majority of medical practitioners who see much of the diseases of women. Those who are looking over medical literature every week, of course, note the opinions expressed by many extremists, and it is possibly well that such views should be made public, in order that the majority may be able to steer clear of them—in the middle of the stream. The objectionable features of the pessary and its application, in the hands of those who are ignorant or careless, have led many to condemn it entirely, and all sorts of surgical procedures, which are not applicable to the majority of patients, have been suggested to take its place. A well-applied pessary, which is constantly looked after, is a great comfort, and, in fact, a curative agent in a large proportion of cases; but one would no more think of putting a splint on a fractured or lame leg and forgetting it, than to introduce a pessary and forget it. It is not simply intended as a support, or an ornament, but it has an actual curative value in proportion to the amount of brains that is used in its adaptation.

The ordinary hard-rubbber pessary has the same disadvantages that a ready-made suit of clothes or a ready-made shoe has, *viz.*, that it rarely suits the case. Then, even if it does suit, at some time, within a few days or weeks, its shape has to be changed, to conform to the new state of affairs. This is a very simple matter when there are instrument-makers close at hand, and, indeed, with an alcohol lamp or boiling water it is not so very difficult anywhere. Nevertheless, I have often been puzzled to know how to arrange the pessary so as to get all of the benefit from it, and recently the thought occurred to me, which I think may be of use to my fellow-practitioners, to have rings of various sizes made of *aluminium wire*, stiff enough to be of service and yet not too stiff to be difficult to shape.

The wire that I use is about the size of a lead in an ordinary lead-pencil. The rings can be made very easily by oneself with an ordinary pair of strong pincers. The sizes that I have found available are two and a half and three inches in diameter. These are wrapped with wool, so as to be about the thickness of one's little finger, and have a silk ligature tied at one end, and are left hanging as in the case of an ordinary tampon. This is a tell-tale which shows that the instrument is *in situ*. These wool-wrapped pessaries can now be shaped into any form and will retain their position. If they are soaked in a solution of four to one thousand mercuric chloride and then dried, they are ready for use. When introduced into the vagina, they can be very easily shaped by placing two fingers in the opposite way and pulling and pressing as desired. After the pessary has been subjected to the sublimate solution and dried, before placing it I usually soak the wool with the ordinary solution made by dissolving one of Seiler's antiseptic tablets in water. This wool, so subjected, I find can easily remain four days in a case in which there is some leucorrhea. If there is very little vaginal discharge, I think we could safely leave one of these pessaries in position a week. In using tampons I invariably apply them in my office and pack the uterus to get it into position; I use these pessaries in the same way. I then request the patient to return at the end of a stated time, and I withdraw the packing myself, thoroughly cleanse the parts, and introduce another. By placing the pessary in the flame, of course the wool is burned off, and the wire is ready to be used over again. The pessaries are very easily made by oneself; but if one does not care for the trouble, they can be had of E. A. Yarnall Co., of Philadelphia, who have made them up for me. I may say that I always use wool at the present day instead of cotton, as it is elastic, and, in fact, is the only thing that is of any use; it needs thorough greasing before it is introduced, as otherwise it is likely to irritate.

A NEW INSTRUMENT FOR THE TREATMENT OF URETHRITIS.

BY J. W. WILLIAMS, A.M., M.D.,
OF PATERSON, N. J.

IN the treatment of urethritis, particularly in the chronic stages of the disease, the beneficial effects of dilatation by sounds is well known, both in hastening the cure of the inflammation, and, what is even more important, favoring the absorption of those transient stenoses of the canal, which, if left to themselves, might become true strictures.

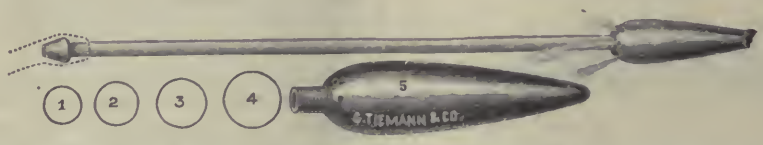
Neither is there any doubt as to the value of thorough irrigation of the urethra with warm water, or a solution adapted to the needs of the case.

In order to carry out these two indications conve-

niently and thoroughly I have devised the instrument here illustrated, made by Tiemann & Co., of New York:

The instrument consists of a straight metal tube, six inches long, and fourteen (French scale) in caliber. At one extremity is an enlargement, over which a rubber tube may be fitted to attach it to a syringe. At the other extremity is a "female" screw for attaching the heads of the instrument. These heads are the important and characteristic feature of the instrument.

They are practically short sounds of the shape shown in the cut. They are five in number, ranging in size from eighteen to twenty-nine, French scale. Each head is an inch and a half in length, and provided with a short



"male" screw for attaching it to the handle. The base of the head is bored for a short distance, so as to be continuous with the bore of the handle. Communicating with the interior of the head and opening around its base are four apertures, directed backward, so as to give a reflux current when fluid is passed through the tube.

The manner of using the instrument is obvious and needs no explanation. I might state, however, that, in addition to plain warm water, I have found the following solutions particularly useful in treatment:

1. A 1:10,000 solution of potassium permanganate.
2. A solution of a teaspoonful of common table salt in a quart of warm water.
3. Thiersch's solution.

Use a fountain syringe and plenty of the solution. The instrument is not to be used until the first, acute stage of the disease has passed, during that time injection of warm water in the usual way with a blunt-nozzled syringe being practised. For irrigation of the deeper portions of the urethra I prefer simply a small-sized soft-rubber catheter—that is, when such a procedure becomes necessary.

The advantages I claim for this instrument (which I have termed an "Irrigating Sound") over other more elaborate forms are the small amount of pain, if any, caused by its introduction; the free flow of the fluid used; its simplicity; and the thoroughness with which it carries out its two objects—dilatation and irrigation. I have had good results from its use, and would recommend it to the profession.

MEDICAL PROGRESS.

Successful Removal of a Tumor of the Left Frontal Lobe.—At a recent meeting of the New York Neurological Society, DR. ARTHUR BOOTH reported the case of an unmarried male, twenty-four years old, who had had hip-joint trouble from childhood, but for eighteen months had had epileptic attacks, general in character. There was no history of an attack of hemi-spasm, or any spasm limited to a single group of muscles, although it was thought that the jerking was most marked in the right arm. In the last seizure, six months before coming under observation, the man had fallen, striking the chin and left side of the head quite severely. There was no other history of injury. Shortly after this, a swelling on the left temple was noticed for the first time, the patient himself, however, stating that it had been there before the fall. At about the same time marked failure of vision was observed. The patient was also troubled by a turning in of the left eye. There was no history of hemianopsia. For a month the man had what he designated as fainting spells, in which there were no convulsive movements. For a year he had had a good deal of headache of a severe character, chiefly referred to the forehead, extending through the temples, and often radiating back as far as the occiput. There had never been vomiting. Memory had failed much during the year, so that it became difficult to recall recent events and the names of those with whom the man was well acquainted. There had been a marked change in the man's manner; he had become dull and disinclined to talk. Syphilis was denied. A family history of pulmonary tuberculosis was wanting. The man's manner was quiet; his face rather expressionless. Speech was slow and somewhat uncertain, though there was no aphasia. The tongue was protruded straight. There was no decided paresis of the face, but there was a slight loss of expression on the right side. There was paresis of the right external rectus. The pupils were widely dilated; there was no reaction to light or in accommodation. Vision was reduced in both eyes, in the greater degree upon the left. There was bilateral optic neuritis, with numerous small retinal hemorrhages. The station was fairly good with eyes closed; there was no ataxia; the knee-jerks were absent, even with reinforcement. There was no anesthesia or analgesia. The sense of taste was normal. The sense of smell was deficient on the left side. On the left temple, just back of the external angular process of the frontal bone, there was quite a prominent swelling, oval in shape, somewhat tender, pressure on which caused pain, radiating through the head as far back as the occiput. Deep pressure at the base of the tumor disclosed an absence of bone at that point.

The symptoms were considered sufficient to warrant a diagnosis of an intra-cranial tumor in the anterior fossa, in the left frontal lobe, and operation was decided upon. When the tumor was exposed it was found to be covered by a tough, soft, red membrane, containing cheesy material, which was removed with a spoon. The circular opening in the bone was found to be one inch in diameter, and the dura mater enclosed the opening. The opening in the bone was enlarged and the dura mater separated from the roof of the orbit, where the tumor was adherent and had caused absorption of the bone. The dura mater was now opened and the tumor enucleated with the finger. There was no shock following the operation; the patient slept well during the night, and the next day talked as well as before the operation. A week later, examination of the eyes showed extensive hemorrhages occupying the entire right retina and two-thirds of the left. There was no perception of light.

After an interval of ten days sight was suddenly recovered to some extent in the left eye. Six days later the patient had a general epileptic attack, and after this again became blind, and remained so. A later examination of the eyes revealed choked disc in the atrophic stage in both eyes.

The Relation of Pseudo-diphtheric Angina to Diphtheria.—BOOKER (*Bulletin of the Johns Hopkins Hospital*, iii, 26, p. 109) records the results of a bacteriologic study of eleven cases of scarlatina, with pseudo-membranous angina; four cases of scarlatina, with redness of the throat, but without pseudo-membrane; one case of pseudo-membranous angina, similar to that of the cases of scarlatina, but without exanthem; two cases of measles, followed by membranous laryngitis, but without visible deposit in the throat; one case of measles, followed by a pseudo-membranous affection of the throat and eyelids; and three of ordinary follicular tonsillitis, without resemblance to either scarlatina or diphtheria. He concludes that the pseudo-membranous affections of the throat that sometimes occur secondarily to scarlatina, measles, and, perhaps, other infectious diseases, often present the clinical features of diphtheria, from which, however, they differ in nature and etiology. The clinical features are not always sufficiently distinctive to differentiate these affections the one from the other. The anatomic changes induced by the activity of the bacillus of diphtheria appear to be characteristic, and unlike those present in the pseudo-diphtheritic processes. Excepting the false membrane, the anatomic changes found in diphtheria are dependent not upon the direct action of the bacilli, but upon a toxic substance to which they give rise. These changes are characterized especially by focal necrosis of tissues, with a peculiar splitting of the nuclei of the cells. The anatomic changes that attend the pseudo-membranous angina of scarlatina are accompanied with an invasion of streptococci, with suppurative processes. The etiologic factor furnishes a certain criterion for the differentiation of diphtheric and pseudo-diphtheric processes, but the diagnosis is, nevertheless, sometimes difficult. Measles and scarlatina render the tissues especially vulnerable to the bacillus of diphtheria. The constant presence of streptococci in pseudo-diphtheric processes is suggestive of an etiologic connection. The streptococci have not been differentiated, and it is presumed that different forms may occur. The relation of streptococci-infection to scarlatinal pseudo-membranous angina has no bearing upon the specific etiology of scarlatina.

Unique Fracture of the Pelvis.—NEUGEBAUER (*Centralbl. f. Gynäkologie*, 1892, No. 47, p. 913) reports the case of a strong, robust woman, twenty years old, who had been married three years, and had borne three children. Fourteen weeks after the birth of the last child, while out riding, the horses became frightened. In the hope of saving her child the mother threw it from her, but in the act lost her balance, and, falling between the horses, was run over by two of the wheels. A considerable time elapsed before professional aid could be brought; and the exact extent of the mother's injuries could not be learned. The child was killed. The woman convalesced after a stay of six weeks in bed. No information could be obtained concerning hemorrhage from the bladder, bowel, or vagina, and fever and suppuration. The woman only recalled that she at first suffered from severe pains, and for four weeks was entirely unable to move in bed, and passed urine and feces involuntarily. Walking was at first difficult, but gradually improved. Menstruation occurred a week after the accident, but was subsequently absent, the woman becoming pregnant. Examined in the third month of pregnancy, the gait was found to be pretty steady; the upper part of the body was held unusually erect; the pelvic obliquity was diminished; the pelvis was funnel-shaped. Vaginal examination disclosed the existence of a fracture of the horizontal and oblique branches of both pubic bones, with considerable separation of the fragments upon the left and union by callus upon the right. The fragments of bone to the left of the symphysis could be seen and felt to alternately rise and fall when the woman walked or raised her legs. Although the sacro-iliac articulations could not be examined, it is thought that they must have been injured, thus allowing of increased mobility.

Puerperal Neuritis.—MÖBIUS (*Münchener medicin. Wochenschr.*, 1892, No. 45, p. 799) has reported the case of a woman, twenty-nine years old, in which, two days after arising from bed, three weeks after the birth of a child, a sense of painful cramp appeared in the calf of the left leg. This kept the patient abed for three weeks, at the end of which time some enfeeblement of movement in the forearms manifested itself. A few days later there was complaint of pain in the scapular regions, which lasted for a week. Then in the ninth week, peculiar sensations in the right forearm were perceived; and the act of writing could not be performed, because the thumb failed to firmly grasp the pen. The flexor longus pollicis was wasted and presented reactions of degeneration. Electric treatment was followed by little improvement.

In a second case, a woman, fifty-five years old, complained of pain at the right elbow, which readily yielded to ordinary measures. Examination, however, disclosed the existence of atrophy of the ulnar and thenar muscles that had been present for thirteen years, following shortly after a labor. Motility was not materially impaired and the electric reactions were preserved.

Both cases are considered to be instances of neuritis of puerperal origin.

Resection of a Ureter.—KÜSTER (*Archiv f. klin. Chir.*, 1892, xliv, 4, p. 850) has reported the case of a boy, eleven years old, whose parents had for a long time noticed tumefaction of the abdomen, which examination disclosed to be dependent upon the existence of a left-sided hydronephrosis. An incision was made in the loin and a pelvic fistula established. It became evident that the right kidney was wanting. The lad recovered speedily from the operation, the fistula persisting, and no urine passing through the bladder. Some two years later, the fistulous opening was enlarged, when it was found that the ureter below the artificial opening in it was obstructed by an impermeable stricture. The ureter was cut through just below the stricture and also at its entrance into the pelvis. The lower portion was freed

and brought up into the capsule of the kidney, where it was sutured, the upper extremity being slit vertically, so as to form a funnel-shaped receptacle. On the day after the operation urine began to be passed by the bladder. The fistulous opening was finally closed by freshening its surfaces and introducing a series of graduated sutures. Recovery was eventually complete.

The Position of the Tongue in Peripheral Palsy of the Facial Nerve.—HITZIG (*Berliner klin. Wochenschr.*, 1892, No. 50, p. 1270) points out the disparity in the views of various authorities as to the position of the tongue in cases of peripheral palsy of the facial nerve. Some maintain that there is only an apparent deviation; while some describe a deviation to one side, and others a deviation to the opposite side. In some cases there have, doubtless, been mistakes in observation. In mild cases of peripheral palsy there is no deviation at all; while in the severe cases it is the rule for the tongue to be thrust out toward the unparalyzed side. This, however, is not the result of any palsy, but of a spontaneous tendency on the part of the tongue to avoid the angles of the mouth, so that it finds its way to the middle of the oral orifice. In proof of this fact the organ will be seen to follow the paralyzed side of the mouth if this be drawn with the finger to the paralyzed side of the face.

Pulmonary Embolism from Mercurial Injections.—BLASCHKO (*Deutsche medicin. Wochenschr.*, 1892, No. 43, p. 965) reports in detail two cases and refers to several others in which the intra-muscular injection of mercuric salicylate in liquid paraffin in the treatment of syphilis was followed by pleuritic pain in the side, dyspnea, cough, blood-streaked expectoration, impairment of the pulmonary percussion-resonance, with the presence of moist râles on auscultation—symptoms that he ascribes to the entrance of minute quantities of paraffin, or of the insoluble mercurial salt into a vein and thence into a pulmonary vessel in which it becomes obstructed. In otherwise healthy persons the complication is attended with no serious results, but in tuberculous persons the consequences might prove injurious.

THERAPEUTIC NOTES.

Injections of Lactic Acid in the Treatment of Malignant Growths.—INGALS (*N. Y. Med. Journ.*, lvi, 24, p. 652) has reported the case of a man, fifty-nine years old, who for a year had been annoyed by the accumulation of an excessive amount of mucus in the throat and a sensation of unusual enlargement that interfered with deglutition, which for six months had been progressive. Eighteen pounds in flesh had been lost. The right tonsil was found increased in size to a diameter of an inch and a half, some thickening extending to the anterior pillar of the fauces and the uvula. The cervical lymphatic glands were not involved. A diagnosis of sarcoma was made and the tonsil was removed by means of the steel-wire écraseur; the thickened uvula was also removed. The wound healed in the course of three or four weeks, except in an area about a quarter of an inch in diameter. New deposits had, however, taken place at the site of the tonsil, giving rise to a tumor about half an inch in diameter and a quarter of an inch in thickness. Applications of a 60 per cent. solution of lactic acid were now begun, and a weak solution of carbolic acid was prescribed as a gargle. The appearance of the ulcerated area improved materially, but thickening was now noticed on the right side of the pharynx behind the posterior pillar, rapidly increasing in size until it attained a thickness of a third of an inch, a width of two-fifths of an inch, and a length of a little more than an inch. The man suffered from severe neuralgic pains, radiating from the tumor to the ear and side of the neck. As this mass could not be removed, it was injected with five minims of a 20 per cent. solution of lactic acid. Profuse bleeding followed each injection. The strength of the solution was gradually increased to 60 per cent., but it was found that from 8 to 10 minims of a 50 per cent. solution, injected in one or two places about three times a week, answered the best purpose. Nevertheless, the growth exceeded the reduction brought about by treatment, but its progress was manifestly modified favorably. The bleeding that at first accompanied the injections no longer occurred after a time. The injections were always made deeply into the tissues, and at times occasioned considerable pain. The general health and strength of the patient remained fairly good. On a few occasions a small quantity of cocaine has been added to the injections. The injection was followed by a spray containing morphine, gr. iv; carbolic acid and tannic acid, each gr. xxx; and glycerin and water, each f ʒiv.

For Hemorrhoids.—External hemorrhoids are first washed with an aseptic lotion, and an application of the following ointment is made three or four times a day:

℞.—Iodoformi	gr. v.
Ext. belladonnæ	gr. x.
Chrysarobin.	gr. xv.
Vaselin.	ʒj.—M.

Internal hemorrhoids are treated with suppositories, each containing:

℞.—Ext. belladonnæ	gr. ⅙.
Iodoformi	gr. ⅓.
Chrysarobin.	gr. j.
Ol. theobromæ	ʒss.
Glycerini	q. s.

KOSSOBUDSKI, *Wien. Med. Pr.*, 1892, No. 47.

Antipyrin-poisoning.—GUTTMANN (*Ther. Monatsh.*, Oct., 1892; *Brit. Med. Journ.*, No. 1665, Epitome, p. 87) has reported the case of a man who had taken one hundred and fifty grains of antipyrin in ten-grain doses twice a day. The first doses were followed by vertigo and impairment of vision. Then symptoms resembling those of the algid stage of cholera developed. The condition was one of collapse, with coldness of the extremities, hoarseness of voice and sunken eyes. The radial pulse could not be felt, and the temperature was 94.1°. The stools were solid; there was a deep rose-red rash upon the trunk. The man answered questions slowly, complaining of headache and noises in the ears. At times he could not see, but at others he would see two, three, or four inverted images.

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SPOROZOA AND THEIR RELATION TO CARCINOMA.

THERE is probably no line of recent foreign investigation the results of which will be awaited with greater interest by American physicians than those of the experiments now being carried out in the various parts of Europe on the minute organisms that have been found in the cells of nearly all carcinomatous growths, and the abundance of which appears at least to hold a direct relation to the malignancy of the growth.

The term Sporozoa[1] was introduced by RUDOLPH LEUCKART to distinguish certain low protistan organisms frequently found parasitic in man and other vertebrate animals from the Gregarines, which may readily be found crowding the viscera of arthropods and worms (*e. g.*, the proventriculus of grasshoppers and crickets), and which they resemble in producing hard-shelled germs (spores). The sporozoa (*coccidia*) have long been recognized in the intestinal tract and skin of man and the lower animals; they have been found in the muscles (*sarcosporidæ—sarcocystis hominis*)[2] and in the blood of man[3] and animals,[4] in molluscum contagiosum,[5] and in malignant papillary dermatitis (Paget's disease).[6]

As far back as 1847, R. VIRCHOW noticed certain enclosures within carcinoma-cells,[7] which he attributed to degenerative processes, and it was not until 1888 that the true character of these intra-cellular bodies was suggested.[8] During the four years that have elapsed since this announcement, specimens from over two hundred and fifty cases of carcinoma have been carefully examined, and the opinion of PFEIFFER and NEISSER fully confirmed.

Much discussion has arisen over the exact relation of the sporozoa to the diseased condition with which they are associated, but by far the most interesting and valuable recent contribution is that of W. PODWYSSOZKI and J. SAWTSCHENKO,[9] of Kiev, who preface their paper, entitled "Parasitism in Carcinoma, and a Description of the Sporozoa Parasitic in Carcinomatous Tumors," with an interesting and exhaustive review of previous work in the same field, accompanied by a bibliography of the subject. The first description of protozoa-like parasites in carcinoma-cells was made, as we have already remarked, by L. PFEIFFER, of Jena, in 1888, who found in the epithelial cells of a fresh, warm, melanotic carcinoma, certain organisms the developmental stages of which resembled very closely spore-formation, as seen in the microsporidia (*Plasmodiophora brassicæ*, or *Synchytrium mercurialis*). PFEIFFER'S observations were soon followed up by ALBARRAN[10] and THOMA.[11] Further investigation has since led PFEIFFER[12] not only to class these parasites with the sporozoa, but to the belief that the various forms of carcinomata will prove to be accompanied by different species of sporozoa.

PFEIFFER'S investigations were followed by NIL SJÖBRING,[13] of Lund, by VAN HEUKELOM,[14] of Leyden,

[1] See Davaine: Leçons sur les Sporozoaires. Paris, 1884.

[2] Rosenberg: "Ein Fund von Psorospermien (Sarcosporidien) im Herzmuskel des Menschen," Zeitschr. f. Hygiene, Bd. xi, No. 3.

[3] A. Laveran: De Paludisme et de son Hematozoaire. 8vo, 300 pp. Paris: G. Masson, 1891.

[4] Danilewsky: "Contributions à l'Etude de la Microbiose Malarique," Annales de l'Institut Pasteur, 1891, No. 12, p. 578.

[5] Pfeiffer: Zeitschr. f. Hygiene, 1888; Neisser: Vierteljahresschrift f. Dermatologie, 1888, Bd. xv.

[6] Darier: Annales de Dermatologie et de Syph., 1889, No. 7. Torök and Tommasoli: Monatshefte f. Dermatol., 1890.

[7] See ref. in Kossinsky: Ueber Physaliphoren in der Krebsgeschwulsten, Warsaw, 1890.

[8] L. Pfeiffer: Correspondenzblätter des allg. ärztlich. Vereins von Thüringen, 1888, No. 2; Zeitschr. f. Hygiene, Bd. iv; Neisser: Vierteljahresschrift f. Dermatologie, 1888, Bd. xv.

[9] Centralbl. f. Bakteriol. und Parasitenkunde, April 23, 1892.

[10] Bull. Méd., April 10, 1889.

[11] Fortschritte der Med., June 1, 1889.

[12] Die Protozoen als Krankheitsereger, Jena, 1891.

[13] Fortschritte der Med., July 15, 1890.

[14] Centralbl. für allgem. Pathol., 1890, No. 22.

and AUG. KOSSINSKY, of Warsaw.[1] SJÖBRING found the parasitic sporozoa in eight cases, VAN HEUKELOM in nearly two hundred, and KOSSINSKY in ten cases. All of these investigators found the parasites most abundant in carcinoma of the breast, but at the same time demonstrated their presence in other forms. SJÖBRING agrees with PFEIFFER in classing the parasites among the microsporidia, and finds in them much resemblance to the parasites producing pebrine in silkworms, the discovery of which did so much to make Pasteur famous.

MICHAUD,[2] VINCENT,[3] and MALASSEZ[4] take sides with the aforementioned authors, while RAMSEY WRIGHT[5] and RUSSEL,[6] of England, oppose their views, and refer the bodies observed to the saccharomyces (Sprosspilze of the Germans), and the last writer claims to have found certain granules in the protoplasm of carcina cells, which, being fuchsinophile, he calls "fuchsin-bodies," and these he compares with the so-called "Altmann's granules," found not only in pathologic but in normal cells. KLEBS,[7] FIRKET,[8] BORRELL,[9] and SCHÜTZ,[10] all oppose the parasitic nature of the described cell-enclosures. Some consider them to be included leukocytes, or, perhaps, red blood-corpuscles; others, a product of a hyaline or horny metamorphosis of the cell-protoplasm. FABER DOMERGUE[11] sees in the so-called sporozoa inside the carcinomatous cells nothing more than was seen by VIRCHOW forty-five years ago, *i. e.*, degeneration-products of the epithelial cells themselves, while CORNIL[12] and HANSEMANN[13] see a possibility of mistaking various stages of karyokinetic cell-division for the sporozoa and their sporocysts. STROEBE[14] and STEINHAUS[15] admit the sporozoan nature of the bodies found in the cells, but oppose the idea that they have aught to do with the etiology of carcinoma. SUDAKEWITSCH,[16] as the result of the examination of sixty cases of different kinds, decides that "a carcinomatous growth of glandular epithelium in man, as well as in other animals, may follow the immigration of parasites belonging to the sporozoa." It will be seen that the subject had already received considerable attention when PODWYSSOZKI and SAWTSCHENKO began their investigations. After the study of the intra-cellular sporozoa in more than twenty cases of carcinomatous growths in various organs—testicle, skin, lip, breast, stomach—these writers assert "that the more evident the intensity of the carcinomatous growth, the more numerous the parasites in the cells; the spongier the growth and the greater the tendency to break down, the greater the number of sporozoa in the cells. The parasites were found most plentifully in medullary growths, and especially in primary and recurrent carcinoma of the breast. In cancroids of the lips and eyelids they were only sparsely present.

In order to study the parasitic sporozoa to the best advantage, pieces of the freshly excised carcinoma should be hardened in Flemming's fluid, the longer the better, then stained with safranin-anilin water, and washed in alcohol to which a few drops of picric acid have been added. The sporozoa are located either inside the cells or in the lymph-spaces between them. The parasites consist of spherical mother-cysts, containing falciform or semilunar embryos—characteristic of the sporozoa. Escaping from the mother-cyst, the embryos become disseminated, pass into the lymph-spaces, possibly into the capillaries, and into neighboring cells. That the bodies found in carcinomatous cells are sporozoa, and that they are parasitic, PODWYSSOZKI and SAWTSCHENKO hold to be demonstrated; they also favor PFEIFFER'S view that different parasites exist in connection with different varieties of carcinoma. The authors do not proffer any conclusion as to the relation of the parasites to the etiology of the disease—a question that remains to be investigated by the inoculation of animals with pure cultures of the parasites obtained from carcinoma, which has not yet been satisfactorily accomplished.[1] They, however, regard it as probable that the sporozoa exhibit here only an illustration of commensalism or symbiosis with epithelial cells. RIBBERT[2] opposes the parasitic nature of the en-

[1] Loc. cit. [2] Semaine méd., 1889, No. 29.
[3] Annales de Micrographie, Dec., 1890.
[4] Archiv de Méd. expérimentale, 1890, vol. ii.
[5] Centralbl. f. allg. Pathol., 1890, No. 11.
[6] The British Med. Journ., 1890.
[7] Deutsche med. Wochenschr., 1890, No. 32.
[8] Centralbl. f. allg. Pathol., 1890, No. 20.
[9] Archiv de Méd. expér., 1890, vol. ii.
[10] Münch. med. Wochenschr., 1890, No. 35.
[11] Semaine Méd., 1891, No. 19.
[12] Journ. de l' Anat. et de Phys., 1891, No. 1.
[13] Virchow's Arch., 1890.
[14] Ziegler's Beiträge, 1891, Bd. xi, H. 1.
[15] Centralbl. für allgem. Pathol., 1891, No. 2; Virchow's Arch., 1891, Bd. cxxvi. [16] Vratsch, 1891, No. 49.

[1] Sheridan Delepine: "Cultures of Psorosperms," Brit. Med. Journ., May, 1891.
[2] Deutsche med. Wochenschr., 1891, No. 42; Centralbl. . Bakter. u. Parasitenk., Oct. 7, 1892.

closures observed in the cells of carcinomata, holding that they are but degeneration-products of the epithelial cells or their nuclei. P. FOÀ, of Turin,[1] declines to accept many of SOUDAKEWITSCH'S figures as those of parasites, and he also holds that the so-called parasites of STROEBE and PODWYSSOZKI are found in non-carcinomatous tissues, and in those not of a new growth, and that they have to do with cell-development. FOÀ then describes and figures bodies that he finds in carcinoma of the breast and axillary glands, and that he considers without doubt to be parasites, but he also believes them to hold but a casual relation to the disease. To the criticisms of FOÀ, PODWYSSOZKI[2] replies that he has been incorrectly quoted, and that unwarranted inferences have been drawn from some of his statements, which seems to be the case.

We admire the conservative and cautious spirit evinced by the investigators of this important question thus far in declining to make any claim for the specific relation of the sporozoa to carcinoma; probably they, along with many others, have taken lesson from the battlefield of bacteriology, strewn with the lifeless remains of innumerable hasty hypotheses and specific germs.

There are one or two points that seem thus far to have escaped the attention of writers on this question. First, the allowance that must be made for certain tendencies toward growth or change recognized by students of variation and other questions of evolution, and which cannot be explained by environment. In the normal fulfilment of function certain organs begin at given periods of life to enlarge and become active, if for any reason, such as failure to marry, normal development is hindered, and we find the organ, urged on by this inherited tendency to change within a certain stage of life, taking on an abnormal growth. The statistics of carcinomata among women show that in about 70 per cent. of the cases the disease is located in the organs of generation—most frequently in the breast. In the majority of these cases, again, the patients are either unmarried or, if married, have never borne children, or so few as to fail to satisfy the normal tendency to activity in the organs concerned. Again, it must be borne in mind that carcinoma is one of the diseases that shows well-marked geographical distribution, being found more frequently among country people and in certain localities, than among inhabitants of cities and in other localities. These considerations enjoin investigators to great caution in throwing the responsibility of the disease on organisms of which so little is known as of the sporozoa.

[1] Centralbl. f. Bakter. u. Parasitenk., Aug. 9, 1892.

[2] Ibid., Oct. 19, 1892.

THE NECESSITY OF THE RESTRICTION OF IMMIGRATION.

IF the press is to be taken as the exponent of popular sentiment, it would seem to be settled that immigration will be interdicted for the next twelve months. This sentiment is in a measure founded upon the expression of medical opinion, which is based on the belief that the greatest danger of importation of Asiatic cholera is through the immigrant-class and their baggage and personal effects. There are other reasons, practical and non-medical, why immigration should be restricted, and there are opposing arguments against restriction, but with these we have nothing to do in considering the subject from a medical and precautionary standpoint.

Judging from the history of epidemics of cholera in Europe, and the numerous scattered places on the Continent at which cholera still exists and has existed with a tendency even now to recrudescence, it is extremely probable that under favorable conditions later in the year, the disease will become more widespread and epidemic, and finally reach the United States. There seems to be a parallel between the conditions and the course of the disease in the years 1865 and 1866, and those of 1892 and 1893. Extraordinary measures will be required to protect the United States from the introduction of the disease during the coming spring and summer.

It is a fact substantiated by past experience that the greatest danger springs from the inflow of the immigrant-class and the fomites of disease concealed in their baggage and personal effects; and it stands to reason that if immigration were temporarily suspended, the problem of preventing a visitation of cholera would be greatly lessened, if not solved. It is a question whether the same end might not be accomplished without resort to so radical a measure. The English practice, which has yielded such favorable results, might be cited as a reason for hesitating before adopting so unusual and stringent a measure as exclusion; but the conditions in England and in the United States are quite dissimilar. In England, under the Local Govern-

ment Board, sanitary law and sanitary administration are made applicable to every part of the realm, and local sanitation is brought to a high degree of efficiency. Therefore, on account of this comprehensive system of local sanitation and the state of preparedness to meet and cope with disease, quarantine is limited to inspection and the isolation of the sick, with little interference with commerce and without the necessity of restricting immigration.

It is far different in this country. We are not yet prepared to throw down the barriers of quarantine, because our internal sanitary administration is only exceptionally adapted to meet the emergency, in the vast majority of places being neglected or only in its developmental stage. We are, however, making rapid strides in matters of sanitation, and may at no distant day catch up with England; but for the present, at least, it would be foolhardy to imitate England's practices without the facilities to carry out her sanitary methods.

If our quarantine defences were uniform, complete, and in the highest stage of efficiency, there would be less justification for a temporary suspension of immigration; but such, unfortunately, is not the case. Quarantine is in the transition-stage of administration. It is by no means certain what will be the issue of the discussion of the various proposed systems now before Congress; but this much is certain, that whether a National quarantine system shall be adopted or the local quarantines be continued and supplemented by Government aid and supervision, a considerable period will elapse before organization and equipment will be completed. This very uncertainty impedes the activity of preparation. Consequently, if the suspension of immigration as a temporary expedient will help materially to prevent our land from the threatened danger—and of this there can be little doubt—by all means let the Government resort to this expedient.

There is another consideration of great weight. This is the year of the Columbian Exposition, and it would be particularly disastrous if, by neglect to lessen the chances of the entrance of cholera, this disease should be introduced the coming spring or summer; but, laying aside this view of the question, if, with the great number of visitors attracted to our shores by the Exposition, immigration remains unrestricted, the immense passenger traffic would greatly enhance the risk of the importation of disease and seriously tax the ability of the quarantine authorities to meet the emergency, should cholera unfortunately break out.

For the protection of the public health and for the best advantage of the whole country, there seems to be no alternative but to suspend immigration as a temporary expedient made necessary by the existing conditions abroad.

SELECTION.

TAX ON QUACKS.

The recent suggestion of the Secretary of the Treasury that the tax on alcohol be increased fifty cents per gallon, in order to raise more money for the increasing expenses of the Government, seems to have met with a favorable response in some quarters, and the question of tariff and taxation will no doubt be considerably discussed by Congress in the near future.

In this connection, the wisdom of putting a heavy and permanent tax on all forms of nostrums and quackery will at once commend itself to all wise legislators who are working for the public good. A stamp-tax of this kind, say 25 per cent., on every form of secret or proprietary medicinal preparation of any kind, whether sold by the retailer, proprietor, manufacturer, or by advertising quack-specialists, would be no hardship to the public, as it would in nowise affect the retail price of these articles. All such manufacturers could easily afford to give the Government 25 per cent. of the retail price, and still have a very handsome profit left, as their net profit is rarely less than 500 per cent., and often very much more.

Legitimate preparations of the Pharmacopeia and other standard preparations, where the complete working formula is public property, should be exempt. But, as the success of quackery depends on secrecy and mystery, and as these two conditions enable unscrupulous persons to get a dollar for a few cents' worth of a simple remedy, it will be seen that there would be no injustice to anyone if a good fair tax were put on the business.

If the Government went still further, and required all nostrum and secret medicine manufacturers to pay a big license, and place on record open to public inspection a sworn statement of the exact composition, together with a complete working formula of each preparation, much good would result. And if, like insurance companies, they were also required to furnish heavy bonds, or make a special deposit, which could be forfeited under proper restrictions, provided their medicine did not do all that was claimed for it, the public would be still better protected, both in health and pocket, and no injustice would be done to the honest manufacturer of articles of real merit.

There is no good reason why the Government should not place the nostrum business on the same basis in its Internal Revenue Department as the manufacture of whiskey and tobacco. Analyses of these preparations should be made from time to time, and heavy penalties imposed if they vary from the sworn formula on record, or if any dangerous drug like morphine is being used.

England, which is said to be a free-trade country, taxes the nostrum business heavily, and derives a large and growing revenue from that source.—*New York Medical Times.*

REVIEWS.

AN ILLUSTRATED ENCYCLOPEDIC MEDICAL DICTIONARY. BEING A DICTIONARY OF THE TECHNICAL TERMS USED BY WRITERS ON MEDICINE AND THE COLLATERAL SCIENCES IN THE RUSSIAN, ENGLISH, FRENCH, AND GERMAN LANGUAGES. By FRANK P. FOSTER, M.D., Assisted by Eleven Collaborators. Volume III. Illustrated. New York: D. Appleton & Co., 1892.

THE third volume of this noble work, in which the medical profession of America takes a just National pride, extends from *Fascia* to *Minjak-lajam*. Praise of such a work is almost or quite superfluous, and criticism worthy of any attention may only be construed as proceeding from a hearty desire to make future volumes, if possible, more perfect. It is plainly impossible to avoid all errors and omissions, and one who has taken a hand even to a small degree in any undertaking similar to that of Dr. Foster and his co-laborers must be most disinclined to find fault.

The limits of our space will allow reference to but a few of the points that might be mentioned. Perhaps the most puzzling inconsistency that appears is the noteworthy lack of uniformity in weights and measures. Turn, for example, to the article *Iodum* or to *Hamamelis*. Several different systems are mixed in a sorry jumble that is certainly unscientific and is confusing to the average reader. It would have been better to choose one or even two systems and adhere to them throughout.

In giving the work its encyclopedic character there should have been scrupulous care that the scientific statements are accurate. For instance, by reference to the word *man*, it will be seen what we mean. From the words, *Man is anatomically, etc.*, every assertion is either absolutely untrue or open to serious question.

A number of remarkable omissions have struck our attention, especially these: *Fuchsinophile* and *fuchsinophilous, globin, lactoglobin* (alluded to under *Milk*), *microphotograph* and *microphotography, jack-knife-posture, genu-cubital, microsozin, Gafsa button, katabolin, metabolin, karyokinesis, lumbo-colotomy, lumbodynia, macrencephalic, macrencephalous, metopism, micrencephalous, metrocyte, microaudiphone, microbicide, mattoid, masochism, mesoplast, mesopic, macromelus, maconie* (mentioned under *makiah*), *maidismus, macrorrhinia, manigraph, maritonucleus, mestosis, microdentism, microgyria, microsthenic, microtomy, microtrichia, metabolize, metapeptone, metaplasis, metapsychosis, metencephalous, macrocephalic, macromania, lymphangiofibroma, lymphadenism, luctic, etc.*

The identity of *hollek* and *hollyhock* is not noted. *Garget* is not properly the name of *phytolacca decandra:* the plant is called garget-root because of the vulgar belief that it is a remedy for garget. Moreover, garget is defined as "mammitis in the cow"; popularly it is applied to a similar disease of swine. Originally garget was a swelling of the throat, a quinsy—a meaning overlooked by Foster.

The interesting etymology of *matzoon* is not given.

There are a great many commensal organisms besides *guest gall-flies* to which biologists apply the term *inquiline.*

Milford Springs is in New Hampshire, not in Massachusetts.

Marteno, the popularly perverted form of *martynia*, finds no entry, though in literary use for the past fifty years.

Glastonbury is given as a noun, but is it not a short way of saying *Glastonbury thorn?*

But of this lexicon it must not be forgotten that any number of such slips can detract but little from its positive merits, both many and great, and which cannot or need not be mentioned here.

READY REFERENCE HANDBOOK OF DISEASES OF THE SKIN. By GEORGE THOMAS JACKSON, M.D. With fifty illustrations. Pp. 553. Philadelphia: Lea Bros. & Co., 1892.

THE author is favorably known as a worker in the field of dermatology. The volume, as the title implies, is a reference handbook, compiled upon the A B C plan, the diseases being discussed in alphabetical order, without attempt at classification. This we regard as a mistake, for the plan fails to bring together diseases nearly related in their nature. A study of the relation of diseases is a field worthy of careful cultivation. The whole subject of etiology and pathology is thereby elucidated, and, as a practical result, therapeutics is made rational. In the volume before us the aim of the author has been to consider the diseases from the standpoint mainly of symptoms, diagnosis, and treatment, the etiology and pathology receiving only scant consideration.

The subject-matter is condensed, and brevity, both of matter and diction, are notable features. The numerous synonyms of diseases in all the languages figure alphabetically in bold type throughout the pages—too conspicuously we think, for they detract from the importance of the author's own views, and moreover tend to confuse the reader.

The book is intended for the student, and especially for the active practitioner who desires to obtain information with the least possible trouble of reading or time. But the amount of the information is limited in a book of this size, owing to the plan of attempting to cover so large a field. The subject-matter is reliable and may be accepted as embodying the principles of dermatology as practised to-day. The opinions of some of New York's representative dermatologists are frequently quoted. The author's own experience, however, has been large, and his personal observations make the book valuable.

There is on every page an effort to bring the subject up to date, especially as to the value and use of the new remedies. Recently described diseases, such as kraurosis vulvæ, angio-keratoma, erythrasma, pityriasis rubra pilaris, and dermatitis herpetiformis, all receive brief or full description, and give further evidence of the statement already made that the book is up to the times. Dermatology is regarded from a practical view—witness

the chapter, for example, upon "Some Dermatological Don'ts."

There is nothing dangerous in the teaching. The treatment recommended, on the contrary, is conservative, and may in all cases be safely followed. It consists of the remedies and formulæ in general use, together with a sprinkling of the newer drugs and combinations, which, however, the author refers to rather than indorses from his own experience. In some cases his views are decidedly positive. Formulæ abound throughout the pages, and a short formulary selected from favorite authors concludes the volume. Photographs and woodcuts occur here and there, which add to the value of the book.

Tuberculosis of Bones and Joints. By N. Senn, M.D., Ph.D., Professor of Practice of Surgery in Rush Medical College; Professor of Surgery in the Chicago Polyclinic, etc. Illustrated with 107 engravings (seven of them colored). Royal octavo, pp. 520. Philadelphia: The F. A. Davis Co., 1892.

Within the past few years current English and American medical literature has been enriched, in a department which was previously nearly barren, by more or less that is worth reading on the subject of surgical tuberculosis. English writers have, however, by no means kept pace with their Continental colleagues in the appreciation of the immense importance of the subject, or in their contributions to it. Still less have they attracted attention by any original studies, and to the German and French authors we have had to look for most of our information. Quite recently, however, English authors seem to have awakened from their lethargy and to be more active in their recognition of the various tuberculous lesions and more minute and accurate in their description of them.

The present work of Dr. Senn's is most helpful in this direction, and is consequently most welcome. It deals with the whole question of the genesis and pathology of tubercle, of the various fates with which it may meet, and the various sequels of primary tuberculous infection. After devoting seven chapters to the general consideration of the subject, he takes up bone-tuberculosis, to which six chapters are assigned, and then joint and synovial tuberculosis, to which he gives eleven chapters. Among these are included sections on non-operative treatment, including that by tuberculin, and that by intra-articular and parenchymatous injection of iodoform, and of the various other substances which have at various times been recommended. Nearly half of the volume is occupied by a discussion of the disease as manifested in particular bones and joints, and of the operative treatment which should be practised for its relief. This naturally comprehends the topic of joint-resections, those which are now generally practised being described at sufficient length.

Like all of Dr. Senn's work, this book is most carefully prepared, and serves as a complete epitome of the subject. We naturally expect to find frequent mention of the names of Volkmann, König, Kraske, Krause, Schüller, Lannelongue, and Ollier, but the valuable contributions and suggestions of others less well known are not in the least slighted. The observations and facts of all modern writers are orderly arranged, and masterly tempered or interspersed with the results of the author's ripe knowledge and experience.

We find very little to which we could take exception or which we could wish to amend. Our main criticism is one that must lose much of its force in view of the circumstances under which the book has been produced, namely, that while written by an American, and published at home, it is yet essentially foreign. Such a book could hardly be based on purely domestic studies and observations. The American and English professions have not yet advanced in this particular direction to a point permitting this. Obviously, then, we need just such a work by which all may familiarize themselves with the characteristic lesions and appearances, as well as with the surgical pathology of tuberculosis, and we are really largely in Dr. Senn's debt for the attractive and complete way in which he has performed the task that he has assigned himself. His advice is always sound, and should be closely followed, particularly, *e. g.*, that upon the performance of atypical resections, p. 306, *et seq.* The author may possibly be charged with a certain disregard of American mechanical aids which are certainly superior to the foreign. For example, we would be glad to see some illustrations of the Taylor hip and knee splints, which are superior to all others, and of the Verity suspension apparatus for dressing certain severe cases of resection of the hip, pelvis, and spine. But after all, these are minor omissions, since it is with the pathologic aspects of the general topic that the work is more concerned.

All in all, the work is most valuable, and deserves the most general sale and study.

Hygiene and Public Health. By Lewis C. Parkes, M.D., D.P.H. London University. Third edition, with illustrations. Pp. 523. Philadelphia: P. Blakiston, Son & Co., 1892.

In the preface to this edition the author calls attention to portions of this book that have been rewritten and brought up to date, especially the article on diphtheria, and the chapters upon etiology and bacteriology in general.

In reading these articles attention is attracted to many statements to which exception can readily be taken. In the chapter headed "The Contagia" there appears the following statement: "With the exception of scarlet fever, relapsing fever, leprosy, suppurative and septic diseases, which rest upon a surer basis, there is still wanting in the case of all these diseases" (reference just having been made to anthrax, tuberculosis, glanders, actinomycosis, diphtheria, croupous pneumonia, enteric fever, etc.) "the complete chain of experimental proof necessary to establish the causal relationship of the organisms which have been described as associated with them."

In the same chapter (p. 412), in referring to the etiology of malaria, mention is made of only the bacillus of Klebs, an organism that is of no more than historic importance, and has nothing whatever to do with the causation of malaria. Nowhere in the book do we find a reference to the work of Laveran, Marchiafava, Celli, Richard, Councilman, Osler, Golgi, and many others, who have practically demonstrated the true nature of

the etiologic factor concerned in the production of this malady.

On the same page we read that Eberth's bacillus of typhoid fever (*enteric fever*, as it appears in the text) is scarcely distinguishable from the common saprophyte, the bacterium termo; this statement is difficult of interpretation, for the reason that the term bacterium termo is now obsolete, and it is hard to say what it did indicate when in use.

The article on enteric fever (p. 445) begins thus: "Typhoid, or enteric fever, *excepting its possible origin from a cow-disease, etc.*" (italics are ours). Under the head Diphtheria we learn that "the etiology of this disease is still to a certain extent veiled in obscurity." On page 222 is quoted the work of Dr. Thompkins, in which it was possible for him to demonstrate in the air of a part of Leicester, England, in which diarrhea was prevalent, a larger proportion of bacteria than in the air of districts not so affected, "and that these same microbes, when cultivated, possessed the power of inducing diarrhea in the human subject." (No reference to the original communication is given.) As is usual in English books, sewer-gas is indicated as being the cause of many diseases, the existence of which cannot be otherwise accounted for. In this work we find it standing either in causal relation or predisposing to diarrhea, typhoid fever, diphtheria, erysipelas, puerperal fever, pyemia, septicemia, hospital gangrene, and Asiatic cholera. On page 219 we learn that long-continued inhalation of diluted sewer-air tends to produce a general loss of health, while two pages further on we are told that men engaged in the occupation of cleaning out sewers become acclimated, so to speak. On page 209 we find that the bacillus of tuberculosis acquires a higher degree of virulence when exposed to the foul air of an overcrowded apartment, than it originally possessed on leaving the lungs of a tuberculous patient.

Space will not permit of a complete analysis of this book. That which is good in it is not new, and much that appears as new cannot, with the best intentions, be accepted as good. After the amount of conscientious labor that has been expended in recent years upon the etiology of infectious diseases, and the conditions that govern their spread, it is certainly depressing to find such statements as those quoted above appearing in a work dated 1892.

HUMAN EMBRYOLOGY. By CHARLES SEDGEWICK MINOT, Professor of Histology and Human Embryology, Harvard Medical School, Boston. 815 pp. 463 illustrations. New York: William Wood & Co., 1892.

PROFESSIONAL students of biology have reason to be grateful to Prof. Minot for the massive collation of embryologic data contained in the eight hundred pages of his recent work.

There has been nothing hitherto giving so comprehensive a view of vertebrate embryology, nor any book better adapted to the needs of the lecturer who wishes to brush up his knowledge previous to presenting himself before his class.

The book is evidently based upon the notes and summaries accumulated by the author during the years of his preparation for the chair he now occupies, and furnishes striking evidence of his great erudition in the field of embryologic research. The training of the writer in foreign laboratories appears to have rendered him purblind to the advantages offered by his own native tongue and to any good in the embryologic work of American investigators, himself excepted. One detects a most unpleasant captiousness in many of the references to the embryologic contributions of such well-known American embryologists as Ryder, Brooks, Whitman, Clark, etc. The employment in the text of such terms as Urei, Merit, Aulage, Deckschicht, Tubenleiste, Vorderdarm, Globules tardif, and a hundred other foreign terms, in place of English equivalents, deserves as little commendation as does the author's preference for English, French, and German colloquial terms in place of properly constructed Greek and Latin derivatives. It is scarcely in accord with the rules of modern scientific nomenclature to coin names like the "zones of His," or to perpetuate such as the "Cochin-China canals." As a rule, the style of diction is good, although the lip tends to curl now and then at such conceits as "the problem was fruitful of fruitless speculation." The chapter on "The Theory of Sex," and that on "Heredity," are most interesting reading.

Taken as a whole, the book deserves commendation, and will form a most valuable addition to the library of the medical specialist and the professional naturalist. The busy practitioner and the student with an overcrowded curriculum will scarcely find time for the *pros* and *cons* of the multitude of embryologic hypotheses, and Mr. Minot would place the public under additional obligation if he would sift out, from the tremendous mass of information contained in his book, the established facts and most generally accepted theories of embryology, and present them without discussion, in the shape of a handy volume, as has been done, for example, by Prof. Flower for the Horse, by Taylor for Anthropology, and by Bennett for Cryptogamic Botany. There is a real need for such a book.

HYGIENIC MEASURES IN RELATION TO INFECTIOUS DISEASES: Comprising in condensed form Information as to the Cause and Mode of Spreading of Certain Diseases, the Preventive Measures that should be Resorted to, Isolation, Disinfection, etc. By GEORGE H. F. NUTTALL, M.D., Ph.D. (Göttingen), Associate in Hygiene and Bacteriology, Johns Hopkins University and Hospital; Member of the Association of American Physicians, etc. Pages xii, 112. New York and London: The Knickerbocker Press. G. P. Putnam's Sons, 1892.

THIS handy little volume could not have arrived at a more opportune time, when so much general interest is being shown in the means of preventing the spread of infectious and contagious diseases. The subject-matter is compiled from the latest conclusions of the best workers in this field, and will be of value to anyone who is practically interested in the subject.

The book contains, among other subjects: General considerations upon thermal and chemical disinfection, with remarks upon the special agents and practical directions for their employment; precautions to be observed by physicians and nurses in attendance upon the sick; also precautions to be taken by the other inmates of the

house; care of the sick-room; the disposal of infected clothing and bedding, etc., in hospitals and private dwellings; disinfection of excreta, water-closets, cesspools, etc.; the disinfection of a room in which an infectious disease has existed; information as to the causes and mode of spreading of certain infectious diseases, and the preventive measures that should be resorted to; and surgical disinfection. Throughout the book "brevity" has been the watchword—a consideration that makes the work especially convenient for reference.

CORRESPONDENCE.

LOW-POWER OBJECTIVES IN MICROSCOPIC DIAGNOSIS.

To the Editor of THE MEDICAL NEWS,

SIR: In this day of microscopic investigations in the diagnosis of diseases, we find almost every practitioner of medicine in possession of a more or less valuable microscope, and doing a certain amount of microscopic work in some line or other. It is to be feared that the majority of these would-be investigators are led to the purchase of a microscope more from the fact that it is a popular "fad" than from real motives of investigation, or as an instrument facilitating the diagnosis of many diseases; but be that as it may, the fact remains that very few physicians not specialists in microscopic work are able to make correct diagnoses of even simple growths and neoplasms. I have observed, even among men who paid considerable attention to microscopic manipulation, that very few are able to tell with any certainty the difference between even well-marked benign and malignant growths.

There are certainly some good reasons for this, one of which is undoubtedly the fact that most of these men have taken up microscopic study after leaving institutions in which competent instruction in some of the fundamental principles of microscopy is given; but from personal observation I believe that the real difficulty lies in the fact that the majority of persons do not use objectives of proper magnifying power. There seems to be a fear of using too low magnifying power, and consequently the opposite result follows, and we find altogether too high a power being used.

The majority of amateurs seem to feel that any magnifying power of less than 500 diameters is too low, while experience shows that a power of about 100 diameters is much better for the ordinary diagnosis of tumors. With a power of 500 diameters the field of vision is extremely limited, and one sees more of the individual cells than of the general arrangement of structures. In other words, he looks for special landmarks and avoids the "bird's-eye" view. This, I believe, is the true fault. A field of the microscope may justly be compared to a landscape, with the landmarks of clumps of trees, rocks, etc., represented by clumps of cells and various structures. No person, in attempting to recognize a new country, would look at individual trees or stones, but would rather take a general view of the whole from some hill-top, and then confirm the opinion thus formed by more minute examination of the woods and plains. Just so with the "microscopic landscape" of a new tumor. The low power (say, 100 diameters) is the bird's-eye view, and the grouping and arrangement of cells will give a better clew to diagnosis than individual cells can, no matter how well stained or how clearly defined by the lens.

It seems almost impossible to shake from the minds of the general mass of physicians the idea that each neoplasm should have its own particular characteristic cell, peculiar only to itself. I believe it is the remains of this old idea that leads to the use of high-power lenses in attempted diagnosis. When the amateur microscopist will shake off this idea and confine his attention more to general views with lower power objectives, I believe he will find it much easier to make correct diagnoses, at least of benign and malignant growths.

Very respectfully yours,

E. H. WILLIAMS.

IOWA CITY, IOWA.

TRAUMATIC SEPARATION OF THE LOWER EPIPHYSIS OF THE FEMUR.

To the Editor of THE MEDICAL NEWS,

SIR: In the *Montreal Medical Journal* for March last, there appeared a paper by Dr. John M. Elder, of Montreal, on "Traumatic Separation of the Lower Epiphysis of the Femur." In it he refers to an article on the same subject, published by me in November, 1890, in the *Annals of Gynecology and Pediatrics*. He speaks of it as having appeared "some time ago," thus giving the idea that it was an old affair; he also says that he is "indebted to it for many references." He goes on to state that he has "managed to disinter from medical journals" over seventy cases; and concludes the text of his paper in these words: "Subjoined is a list of references to the literature of the subject, so far as I have been able to investigate it."

He then presents an accurate copy, even to a slight typographical error, of a list appended by me to my paper. He probably failed to notice the fact that eighteen of the items contained in it were not "disinterred from journals," but derived from books. In adding my article to it, he omitted both name and date.

Now the preparation of that list had cost me many hours of labor; and upon discovering Dr. Elder's bold and disingenuous appropriation of it, I wrote to the editors of the *Journal*, calling their attention to the matter. I also sent them a copy of my paper. My letter was handed by them to Dr. Elder, who wrote to me enclosing a draft of a "correction," which he proposed to insert in the *Journal*, apologizing for a "careless omission" of my name. This I declined to accept, and I wrote to the editors that my complaint was not of a careless omission, but of a deliberate and dishonest claim by another to work done by myself. At their suggestion I then wrote out for publication a statement, as courteously worded as I knew how to make it, considering the unpleasant nature of the facts, and sent it to them on the 12th of July.

On the 21st of that month the manager of the printing-office wrote me, saying that one of the editors was very ill, and the other two were abroad; and proposing to hold my letter until the return of those gentlemen, which he thought would be in time for the next issue of the *Journal*. To this, of course, I agreed.

Nothing more was done until November 22d, when I

wrote again to the editors about the matter, but they have made no reply.

I am fully confident that they unwillingly became accessories to Dr. Elder's literary theft; but am surprised that they did not feel constrained to promptly express their disapproval of it upon its being brought to their notice. By abstaining from so doing, it seems to me that they tacitly connived at it, becoming, in legal phrase, accessories after the fact.

When frauds of this kind are committed, it is not merely the individual that suffers; an injury is done to the whole profession. This injury is intensified if the error is condoned or winked at. It is upon this ground, and not from any desire for personal redress, that the present statement is made.

I am, Sir, respectfully yours,

JOHN H. PACKARD, M.D.

1924 SPRUCE STREET, PHILADELPHIA,
December 28, 1892.

EARLY OPERATION FOR APPENDICITIS.

To the Editor of THE MEDICAL NEWS,

SIR: If the subject is not worn threadbare, I should like to report the following abstract of a case recently under my care. It emphasizes one of the deductions in your editorial of the 10th inst.: "Do not hesitate, if the symptoms are growing worse, to open and explore."

W. D. V., a previously healthy, well-developed young man, was taken suddenly to bed with agonizing pain, at first referred to the epigastric region. Deep pressure elicited severe pain limited to a space about two inches square, deeply situated just where McBurney has described the appendix to be. The patient always insisted that "there is a lump there, causing my trouble." No tumor could ever be made out, but deep pressure always located the one seat of pain. The anxious face, the readiness with which all else was dropped and the patient's whole attention was absorbed by his abdominal trouble, were to me conclusive evidence of something very serious.

The history of the appendicitis is similar to that so often recorded. The bowels were moved daily. Hot poultices for three days were followed by ice poultices. Considerable morphine was occasionally required.

On the fourth day, I desired to cut and explore. Good authorities urged that, because no tumor was felt, operation might advantageously be delayed. Chill and sweat presented on the eleventh day. Operation was then performed and an ounce of pus was evacuated from a sac formed by the agglutination of the head of the cecum, the appendix, and the abdominal wall. The gut was of black hue, and friable. The appendix had discharged through a small hole in its neck. The parts were thoroughly washed out with boiled distilled water. The appendix and all gangrenous tissue were removed, a drainage-tube was carried through the lumbar region in the back, the peritoneum was sewed up, and the wound closed.

Everything did well and the hopeless case promised to recover. On the fourth day, however, a chill occurred and symptoms of shock set in. Examination revealed a small stitch-abscess over the peritoneum, whose wound was perfectly healed. The drainage-tube, it was found, did not drain. It was thoroughly cleaned out and the stitch-abscess was also treated with antiseptic attention, but the patient passed from the state of shock into collapse and died in six hours.

It seemed to me that in this case, operation had better have been performed early, say on the fourth day, before the pus had come. Secondly, when the shock (probably due to the rupture of the rotten gut) appeared, it had been wiser to have opened the peritoneum and placed sterilized or medicated gauze in the old abscess-site, covering the intestines well and leaving the wound open. Thirdly, in such a case a drainage-tube does not drain, and hence is worse than useless.

Respectfully,

T. R. CHAMBERS.

EAST ORANGE, N. J.

OBSTACLES TO A NATIONAL QUARANTINE.

To the Editor of THE MEDICAL NEWS,

SIR: I have read with interest your leader in the issue of December 24th, on National Quarantine, and I would like the privilege of a word in reply. The advantages of a National quarantine have of late been fully and ably stated and seem to be generally conceded.

In regard to the objections you raise, you admit that, with the exception of the alleged Constitutional obstacle, "no one of them is very strong by itself, and each one can be overcome if taken singly." Therefore they can be disregarded. As for the Constitutional question, as you say, every one admits that Congress can establish and control quarantines against foreign countries; but, if I understand you aright, the trouble you anticipate is that the State might refuse to abandon its own quarantine system, and that the State and National quarantines might conflict. If you will pardon me for saying so, I believe this objection to be wholly imaginary, for two reasons.

First, because if an efficient National quarantine were to be established, the local quarantines would doubtless pass into "innocuous desuetude," or out of existence altogether, because they would have no function to perform. If, on the other hand, the National quarantine should at any time prove to be inefficient, it could do no harm to have it supplemented by the local organization. I fail to see how a local quarantine can make the authority of the United States "practically *nil*."

It certainly could not admit any person or thing which the United States authorities had excluded, and if it stopped those which the National quarantine had passed, it would appear to be only an additional precaution, or, at the worst, an unnecessary one. That the double quarantine would present such an obstacle to commerce as to materially impede it is a contingency not very likely to arise, as it is not probable that a State will take measures to destroy the commerce of its own ports. The New York Chamber of Commerce is probably as much interested in this question as any body of citizens, and it has emphatically declared itself for National quarantine.

Secondly, it is a well-known principle of Constitutional law that where authority is granted, all powers are by implication granted which are necessary to enforce that authority; hence, if Congress has the power to establish National quarantine, and local quarantine should

prove to be an obstacle in its way, Congress has implied power to annihilate, if necessary, the latter.

Respectfully yours, J. H. PLATT.

LAKEWOOD, NEW JERSEY.

DIABETES MELLITUS FOLLOWING AN INCISED WOUND OF THE HEAD.

To the Editor of THE MEDICAL NEWS,

SIR: The case herewith reported presents features of interest that seem to make it worthy of publication.

P. H., a male, eighteen years old, was, with a companion, cutting down a tree, when the axe glanced, causing an incised wound over the temporal bone, about one and a half inches long and one-half inch deep. The wound healed by granulation and nothing more was thought of the occurrence until about a month later, when the man, who had previously seemed perfectly healthy, commenced losing flesh and voiding a large quantity of limpid urine, amounting in twenty-four hours to one hundred ounces or more. When first called to see the patient, I at once noticed the increased urinary discharge, and on examination found an enormous quantity of sugar present. The patient sank rapidly and succumbed about four days after my first visit. From the previous good health of the patient and from the fact that the symptoms appeared so soon after the wound of the head, it seems possible that there may have been a causal connection between the wound and the diabetes, there being no hereditary predisposition to the disease. Respectfully,

J. B. LOCKRIDGE, M.D.

DRISCOL, POCAHONTAS CO., W. VA.

ANTISEPTIC MIDWIFERY.

To the Editor of THE MEDICAL NEWS,

SIR: THE MEDICAL NEWS for November 26th last contains an article by Dr. Garrigues on that always interesting subject, antiseptic midwifery. It is somewhat unfortunate that Dr. Garrigues should quote, in support of his position, the statistics of the New York Maternity Hospital. The showing is not very favorable: in eight years the deaths have been 1 to 106 confinements; those from sepsis, 1 to 453 confinements. It seems to me that the statistics of the Preston Retreat, of Philadelphia, afford more convincing evidence of the virtues of antiseptic midwifery. Here is a maternity that, by a kind of natural selection, draws from the poor classes of a large city its most difficult cases; and yet the showing is 1000 cases without a death. (A case admitted in a dying condition from eclampsia has very properly been omitted.)

Respectfully, FRANCIS L. HAYNES, M.D.

LOS ANGELES, CAL.

HYDRIATIC OR HYDRIATRIC.

To the Editor of THE MEDICAL NEWS,

SIR: Allow me to say that though Dr. Sihler is correct in the use of the word hydriatic as an adjective applied to treatment or procedure indicating treatment or procedure with water, this word cannot with propriety be applied to some nouns, such as school or institute. Here the adjective hydriatic is correct, because it is derived from *ὑδωρ*, water, *ἰατρική*, medical treatment, a school or an institute for the medical treatment with water.

Hydriatic is a shorter word for hydrotherapeutic, expressing exactly the same thing. It would, therefore, be tautology to say hydriatic treatment, while hydriatic treatment would be correct.

Respectfully, SIMON BARUCH, M.D.

51 WEST SEVENTIETH STREET, NEW YORK.

NEWS ITEMS.

Society Meeting.—Philadelphia Pathological Society, January 12, 1893, 8.15 P. M.

Pasteur was seventy years old on December 27th. The event was observed by a special celebration.

BOOKS AND PAMPHLETS RECEIVED.

The Remedial Uses of Hypnotism. By Frederick Henry Gerrish, A.M., M.D. Pamphlet. Portland, Me.: William M. Marks, 1892.

Adenoid Growths of the Naso-pharynx and their Treatment. By A. W. De Roaldes, M.D. Reprint, 1892.

Consumption and Kochine (Tuberculinum Kochii). II. By Rudolph Seiffert, M.D. Authorized Translation by Wolf von Schierbrand. Chicago: Ed. Ackermann & Co., 1892.

Why Hygienic Congresses Fail. Lessons Taught by the International Congress of 1891. Pamphlet. By Elizabeth Blackwell, M.D. London and New York: George Bell & Sons, 1892.

The Mechanical Aëration of Water. By Prof. Albert R. Leeds, Ph.D. Reprint, 1892.

I. Abcès du Larynx dans la Scarlatine. II. Un Nouveau Cas de Chancre Induré de la Fosse Nasale. Par E. J. Moure, M.D. Paris et Bordeaux: Feret et Fils, 1892.

A Treatise on Nervous and Mental Diseases. By Landon Carter Gray, M.D. Philadelphia: Lea Bros. & Co , 1892.

A New Consideration of Hereditary Chorea. By R. M. Phelps, M.D. Reprint, 1892.

Fissure of the Anus and Fistula in Ano. By Lewis H. Adler, Jr., M.D. Detroit: George S. Davis, 1892.

The Physician's Visiting List (Lindsay & Blakiston's) for 1893. Philadelphia: P. Blakiston, Son & Co.

Albuminuria of Pregnancy: Two Cases. By Andrew J. Downes, M.D. Reprint, 1892.

Address Delivered before the San Francisco County Medical Society on Retiring from the Presidency. By D. W. Montgomery, M.D. Reprint, 1892.

The University of Chicago, 1892-3. Program of Courses in Biology. Chicago: The University Press, 1892.

Physiology. A Manual for Students and Practitioners. The Students' Quiz Series. By Frederick A. Manning, M.D. Philadelphia: Lea Bros. & Co., 1892.

A Treaties on Diseases of the Rectum, Anus, and Sigmoid Flexure. By Joseph M. Mathews, M.D. New York: D. Appleton & Co., 1892.

A Manual of Bacteriology. By George M. Sternberg, M.D. New York: William Wood & Co., 1892.

Tincture of Calumba, with Remarks upon the Injurious Influence of Light on Some Preparations, etc. By J. B. Moore. Reprint, 1892.

The Paralyses in Children which Occur during and after Infectious Diseases. By M. Imogene Bassette, M.D. Reprint, 1892.

Tubercular Ostitis of Tarsus—Rheumatoidal Arthritis of Tarsus. By H. Augustus Wilson, M.D. Reprint, 1892.

Report of the Board of Trustees of the Eastern Michigan Asylum, at Pontiac, for the Biennial Period Ending June 30, 1892. Lansing: Robert Smith & Co., State Printers and Binders, 1892.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

REPORT OF CASES OF MORAL IMBECILITY, OF THE OPIUM-HABIT, AND OF FEIGNING, IN WHICH FORGERY IS THE OFFENCE COMMITTED.[1]

BY J. T. ESKRIDGE, M.D.,
OF DENVER, COLORADO;
PROFESSOR OF MENTAL AND NERVOUS DISEASES IN THE UNIVERSITY OF COLORADO; NEUROLOGIST TO THE ARAPAHOE COUNTY, TO THE ST. LUKE'S, AND TO THE DEACONESS HOME HOSPITALS.

DURING the past year I have been called upon to testify in the criminal court in several instances in which the subjects arraigned, all for the same offence, forgery, presented the same excuse, insanity. I have arranged these cases into three classes: moral imbecility, morphinomania, and feigning. As most of the persons assigned to each class present many features of interest, both to the lawyer and physician, I shall give histories illustrative of each group.

CASE I. *Moral imbecility.*—R. B. T., twenty-two years old, a male, and by occupation a printer, has been arrested for numerous forgeries. I have been unable to learn anything definite of the patient's family history, but from a letter written by his mother, in which she claims an exceptionally good record for the family, I think that she is mentally below the average. The young man is a decided blond, of medium height; he is slender, pale, and presents a weak and anemic appearance. His head is of fair size, but it is irregular in outline, and is in aspect decidedly different from the average head. He seems bright and intelligent, is said to be quite expert at his trade, and is a voluble and rather plausible talker. Of his life before his fourteenth year I have been unable to learn anything, but at this age he began to learn his trade, soon became addicted to the excessive use of cigarettes, indulged in alcohol and venery, contracted the habit of gambling, and not long after his fourteenth year he commenced to forge checks for small amounts. This he did in Pueblo, and, on being arrested, his family redeemed the checks and he was not prosecuted. After being released, he again committed forgery, never drawing a check for a large amount, but simply making them large enough to supply money for his immediate drinking or gambling purposes. He went to Kansas City, worked for a short time, but soon resumed his habit of forging checks to secure small sums of money. He was accustomed to draw a check in his own favor, signing it in the name of some imaginary party, and before the check went to protest he would secure money on another forged check and pay the amount of the former forged paper. He seemed to regard his actions as legitimate, provided he succeeded in paying the checks before they went to protest, and appeared unable to realize anything criminal in his acts. He finally succeeded in drawing the money on so many checks that he was compelled to leave the city to escape arrest. He returned to his family in Pueblo, again forged several checks, and was arrested. His family again came to his rescue, but warned him that if he were again arrested for forgery they would not try to shield him from the law. He came to Denver in the latter part of the year 1891, and before he had been in the city twenty-four hours he forged three or four checks, all for small amounts. To illustrate his actions I will read from his attorney's letter to me.

"DENVER, COL., May 24, 1892.

"The facts pertaining to R. B. T., so far as I have any connection with his case, and so far as I possess any knowledge of him as an individual, are substantially as follows:

"Some time prior to December, 1891, he was arrested and charged with the passage of some three or four forged instruments of writing. He caused himself to be entered, in one of the trials, as his own attorney, and defended himself with very considerable vigor, but, of course, without any technical knowledge, and the result was a conviction. The conviction was set aside for manifest errors, and I was assigned to defend the prisoner.

"I undertook his defence, and endeavored to establish an alibi, but was not successful. He was again convicted, and sentenced for a period of eight years to hard labor in the penitentiary. I took out a writ of error to the Court of Appeals, and upon a presentation thereof, was granted a supersedeas, wherein the bond was fixed at $1000. This bond was given and T. was again at liberty. He went to the town of Ouray, Colorado, and remained there several months, until his other cases, which had not been disposed of, were set for trial, and practically beat his way on the railways from Ouray to Denver, a distance of several hundred miles. Upon his arrival here, I succeeded in having his various cases continued to await the action of the Court of Appeals in the supersedeas case pending in that tribunal. I then explained to him (and he fully understood the facts), that the Court of Appeals would not pass upon his case prior to September or October (about six months later), and that, in my opinion, the case would be reversed, and in all probability his cases would never be tried, provided he would behave himself in the meanwhile as a law-abiding citizen should. He promised me a faithful observance of my instructions to him, and immediately thereafter, without any provocation so far as I can see, and with money in his pocket, enough to support him, and with a good trade as printer, at which he is an expert, he proceeded to forge some seven or eight checks for a gross aggregate amount not to exceed sixty-five or seventy-five dollars.

"In his earlier forgeries in 1891, which were likewise in very small amounts, he used the name, S. M. Simpson, and signed them either with that name or with a

[1] Read before the Medico-Legal Society of Denver.

name of similar sound. In his more recent forgeries, taking place a month or two ago, he used the same character of handwriting and the same name, with, perhaps, one exception. There has never been an attempt in any of his forgeries to feign any handwriting, and I think, with one exception, the payee in all of them has been the same."

The young man, in the latter part of May, 1892, was brought to my office, where I spent about two hours in investigating his case.

I found that all his forgeries had been committed solely and simply as a matter of convenience, and that he did not think he had ever committed forgery in a criminal sense. He never drew a check for more than a few dollars, just enough to meet his present wants, and seemed to believe that if he succeeded in raising the money to pay the check before it went to protest he had done nothing more than play a smart trick to secure money for a pressing necessity. All his actions sustained this view of his case. He had on more than one occasion drawn a check for a few dollars, when he had at the same time money at his room. He said he did this because it was more convenient to draw a check than to stop his gambling and go to his room for money. If he were unmolested, the next morning he would pay the check before it went to protest. He acknowledged that forgery, as ordinarily practised, was a crime and should be punished. He appeared to think that he was being persecuted, and did not realize that he had done anything wrong in forging a man's name to secure money, when he meant to pay the check himself, and prevent anyone losing anything by his actions. He is supremely egotistical and intensely selfish, and cannot realize that his convenience should be interfered with, even though the whole community should suffer on account of his actions.

At his trial for insanity in the county court, I testified that I believed him to be a moral imbecile, whose selfishness and egotism caused him to disregard all law when he wished to gratify some passing desire. The jury returned a verdict of insanity, and he was remanded to the custody of the sheriff until room for him should be found in the State Asylum. He is still in the county jail here, and has been since his trial, as our State Asylum is overcrowded. At his trial he ignored his insanity and tried to justify his actions on the score of expediency.

During his stay in the county jail he has written several long and interesting letters. In a letter to his wife, written a few days after he was adjudged insane, he exultantly recounts his triumphs in Denver. He tells her that through the shrewdness of his attorney and his own masterly way of conducting himself, the judge, the jury, the county attorney, and even an expert on insanity, have been deceived, and he has been declared insane. He informs her that he is not very bad, and that, although only two days have elapsed since the trial, he is already able to recognize his attendants; and one week's detention in the asylum, to which he feels sure he will be transferred in a day or two, will suffice for his complete recovery. His conduct in the jail has been overbearing to an offensive degree. He speaks to his attendants as though they were his vassals, declares that he is being persecuted, and pompously asserts that he is going to have the whole matter investigated. He insists on his attorney visiting him several times each week, and relates to him in great detail his real or supposed wrongs. He yet languishes in jail, but still remains the same overbearing, unconquered, self-important individual. This young man indifferently drew checks on any convenient bank, and with none of which had he ever kept an account.

We will now study the nature of moral imbecility and compare T.'s case with others that are on record.

Bucknill and Tuke, in their work on *Psychological Medicine*, in a foot-note on page 49, state: "In fact, the term moral insanity is now universally restricted to that morbid condition which results in immoral acts without apparent intellectual disorder." Dr. Crichton Browne's description of moral insanity, written many years ago, is regarded as one of the best. He says:

"Moral insanity is of frequent occurrence in early life. The intellectual faculties of the person affected by it remain entire and unimpaired. He is perfectly capable of perceiving and knowing and judging. He cherishes no delusion. He cannot in the ordinary and legal acceptation of the term be pronounced insane, and yet he is to all intents and purposes of unsound mind, and as much requiring guidance, restraint, and treatment as the furious maniac. He suffers from entire perversion of the moral principle, from the want of every good and honest sentiment. He is actuated by impulse, or by the most selfish, depraved, and cruel motives; he presents, in short, a perfect picture of a desperado or ruffian. The existence of moral insanity, like the existence of everything else, has been called in question, and at the present day there are not lacking those who will recklessly commit the moral monomaniac to the scaffold or the penitentiary, little thinking that in so doing they punish disease and not crime. We are forced to acknowledge moral insanity as an actual disease by the most cursory glance at the previous history of some of those by whom it is manifested. Many of them from being refined and virtuous, and upright and prudent, have become coarse and licentious, and dishonest and reckless. We believe that many of our jails and penitentiaries are peopled by such." (*Ibid.*, p. 244.)

Dr. Prichard, one of the ablest and earliest of English physicians to devote much time to the study of the form of insanity under consideration, remarked: "It seems not improbable that many persons, wrong-headed and perverse through life, and singularly capricious and depraved, would afford in reality, if the matter could be ascertained, examples of moral insanity, native or congenital." (*Ibid.*, p. 245.)

Bastian wrote many years ago: "There are certain beings who are moral imbeciles." "It is remarkable," he states, "what an acute intellect may sometimes coexist with an entire absence of the moral sense." (Reynolds's *System of Medicine.*)

Cases of moral imbecility are often difficult to diagnosticate. Some may take the form of so-called

kleptomania, some of pyromania, some may be impulsively homicidal or suicidal, others may be simply vicious and perverse, taking delight in acts of cruelty or in annoying their associates; while, in all, there is to a greater or less extent a loss of self-control.

In a recent brochure entitled *Prichard and Symonds; with Chapters on Moral Insanity*, Tuke gives a letter from Dr. Prichard to his (Tuke's) father, in which he says: "I am desirous of knowing whether you have observed (at the York Retreat) any cases of moral insanity. By that term I distinguish the mental state of persons who betray no lesion of understanding, or want of the power of reasoning and conversing correctly upon any subject whatever, and whose disease consists in a perverted state of the feelings, temper, inclinations, habits, and conduct."

Dr. Tuke himself describes the condition as being "not loss of memory, not delusion or hallucination, not any deficiency of talent or genius, not any lack of mental acuteness, and certainly no incoherence of ideas or language, but a deficiency or impairment of moral feeling or self-control, such being either the development of a character natural to the individual, or a departure from it, which contrasts most strikingly with its former traits." (*Brain*, part lvii, p. 126.)

Tuke says that the diagnosis of moral insanity cannot be made by any rule, but that each case must be studied and decided in relation to the individual himself, his antecedents, education, surroundings, and social status, the nature of certain acts, and the mode in which they are performed, etc. (*Ibid.*, p. 131.)

We have, then, in moral imbecility a moral perversion, with loss of self-control.

The young man, the history of whose case has just been given, is nervous, subject to attacks of severe headache, with slight fever, coming on once or twice each year, and lasting one or two weeks at a time. Early in life he fell into habits fitting a criminal of mature years, and forged checks for small amounts, from time to time, apparently as a matter of convenience. The amounts of money he secured on checks were always small, and the forgery was done in a routine and systematic manner. When asked in court if he did not know that forgery was a crime and punishable, he promptly replied that he did, and made no effort to explain why he had committed forgery. He was asked if he had not committed forgery. He said that he supposed he had, or, at least, people seemed to think he had. On inquiring if he expected to commit forgery again, he replied that he did not, as he had no desire to be imprisoned. Then he was asked what he would do if he wished to purchase a parcel of goods, if all his money should happen to be at home, several blocks distant. His answer was that he would either go and get his money, or give a check for the amount, then get the money and pay the check at his convenience. When asked if he did not know that this would be forgery, he indignantly replied that it would not, as he would not be trying to cheat anybody. Convenience with him is supreme law, and self-gratification the great object of life. Egotism and a disregard of the rights of others characterize all his actions. All of his actions with which I have become familiar correspond with the statements that he made to me and before the jury.

The next case that I wish to report is one of moral imbecility, complicated by the opium-habit. Alcoholics and neurotics are found in the family tree.

CASE II.—Mrs. W., twenty-four years of age, of Nebraska, is a large fleshy woman; mentally rather dull, and her mind acts slowly. As a girl, up to her sixteenth year, when she was married, she manifested few symptoms different from other girls of her age, except that she seemed wayward, headstrong, and somewhat eccentric. At her first confinement she became insane (form not known), and remained in this condition for several months. Shortly after her recovery from this mental aberration she became hysterical, peevish, and fretful, and developed kleptomaniac tendencies. When she went to a store to order groceries she would fill her pockets with articles of slight value. Many of these were absolutely useless to her. At times she ordered goods in considerable quantities to be sent to the houses of different persons, saying that she had been requested to leave such orders. Finally her lying and thieving propensities caused her to be such a nuisance that merchants ceased to believe or trust her. After a while she began to have hysterical paroxysms, of several hours' duration, during which she would lie convulsed and semi-conscious. About this time, some four years ago, she began the use of morphine. She had hysterical hemi-anesthesia that lasted a year. Some three years ago she began to attend the meetings of the Salvation Army, and by some of the religious fanatics she was considered quite an acquisition to their ranks, as she made as much noise and professed as great a change of heart and character as the best of them. One night, in their experience meetings, she arose and said: "I wish to tell what the Lord has done for me. Last night I slept in the arms of a railroad man; to-night I shall sleep in the arms of Jesus." Some one in the gallery inquired in a loud voice, "Are you engaged for to-morrow night?" The meeting went on till a late hour as usual. When it ended, and the people were leaving the house, she was seen standing in the vestibule looking searchingly at the male portion of the congregation as they were leaving the building. Finally, when most of the people had left, she inquired of a man if he knew the man who inquired if she were engaged for "to-morrow night," stating she would like to see and make an engagement with him.

I mention this episode in the life of this moral imbecile to illustrate the utter worthlessness and hollowness of all professions of reformation made by such mentally defective creatures.

Whether she had resorted to forgery before she came to Denver about two years ago, I was unable to learn. Her husband is small, insignificant-looking, and a worthless-appearing man. It seems that he and a certain other man were cognizant of her forgeries and profited by them, if they did not suggest and direct them.

Within a few months after she came to this city she had succeeded in passing eighteen forged checks, all for small amounts. They were all in the same handwriting, which did not differ materially from her usual writing, with one, or possibly two exceptions, signed by the name of the same person, and were nearly all, if not all, drawn in favor of the same individual. About the only variation that was noticed about the checks was a change of address on nearly every one. It was her custom to go into a store and order a small bill of goods sent to her at a certain address, and then offer in payment a check drawn for about ten or fifteen dollars. As the purchase that she had made did not amount to more than two or three dollars, she obtained, as a rule, about ten dollars for each check.

When she was arrested and committed to the county jail she was under the influence of morphine, and probably of whiskey. She claimed to have been accustomed to take from ten to twenty grains of morphine daily. I saw her, after her imprisonment, with Dr. M. Baker, and we soon succeeded in reducing the quantity of morphine to two grains daily, and in about one month we stopped it entirely. She gained considerably in flesh after the drug had been discontinued.

When she was being tried for the forgeries, at the request of the district attorney and the attorney for the defence, the court appointed Dr. McLauthlin and myself to make an examination into her mental condition.

We found no physical evidence of any organic nervous lesion, and physically she appeared to be in an excellent condition, notwithstanding that she claimed to be unable to feel the contact of substances or the prick of a pin in certain areas. On repeated examinations of the sense of touch and pain over different portions of her limbs we found the areas to change in size and situation from time to time; so that we were forced to the conclusion that she was feigning anesthesia and analgesia. She appeared to have but little regard for the truth, but exhibited great caution and deliberation in her answers to our inquiries concerning the forgeries, lest she should contradict herself. She claimed to know nothing of all the checks, save one, and to remember nothing of obtaining money or goods on any but this one. This particular check she said was given her by a male friend. When asked why she had given a wrong address when she obtained money and goods on it, she said that she did not want the merchant to know where she was stopping. On having her write her name and then showing her the identity of the handwriting on the forged checks and on the paper on which she had just written her name, she became confused, but stuck to her former statement that the check had been written and given her by a friend. On questioning her in regard to her actions on the days on which the seventeen other checks had been drawn and passed, it was found that she had a fairly good memory for everything that occurred on those days, except what took place in relation to the checks.

Dr. McLauthlin and I agreed that she was feigning, knew all about the forged checks and the obtaining of money and goods on them; and we further agreed that she was a moral imbecile. Before we were called into the district court to testify, she was taken to the county court and adjudged insane, and remanded to the care of her father and mother in Omaha, where, I have no doubt, she is still pursuing the even tenor of her ways, and probably visiting revival meetings and professing great change of heart.

In the county court I simply testified that the unfortunate woman was morally rotten, that she was a criminal and moral imbecile by inheritance, nature, and practice, without self-control to restrain her from following her evil impulses, and that she was incurable and would live and die a criminal and a moral blot upon the community in which she chanced to reside.

On comparing with each other the histories of the two cases just related it will be perceived that they vary greatly in certain respects. In one, the young man, there are no kleptomaniac tendencies; he is bright, intelligent, egotistical, and oblivious of the rights and privileges of everybody else; he will not steal, he abhors a thief, although he has not hesitated to take mean advantages of his partners in the gambling business; he is a systematic petty forger, to such an extent that he may be said to have a *penchant*, or almost a mania, for forging, yet his actions have shown that these forgeries have been committed rather for convenience than for the purpose of defrauding anyone; he seems to take pride and delight in obtaining money on a worthless piece of paper, and tries to pay the check before it is protested. In this he can realize nothing wrong. When confronted with his crimes he denies nothing, but acknowledges all, gives a detailed account of every transaction, his intentions, and the causes that led up to the forgery.

In the other, the young woman, kleptomaniac tendencies have been manifest for a number of years; she is dull, somewhat stupid, suspicious and deceitful; she exhibits no egotism, and apparently cares nothing for the opinions of others; she is not a systematic forger, but seems to have been actuated by a different motive than that shown by the young man; she desires to defraud, and by falsehoods keeps her address a secret; it is only comparatively recently that she has resorted to this method of gaining money, and when confronted with proofs

of her guilt she lies, and persists in lying, although she knows that she is not believed. She even denies all remembrance of obtaining money on more than one check, and this she maintains was not forged by her, although her own handwriting condemns her.

What is the difference? The young man belongs to a more definite and better class of moral imbeciles than that to which the woman is assigned. He does wrong because he sees and recognizes no wrong in what he does. In the woman two causes seem to be in operation—one a partial moral obliquity, and the other a delight in doing wrong because it is wrong.

There is one mitigating circumstance connected with the woman's forgeries, and this should not be omitted in summing up the character of her actions. It was observed that when she obtained money on forged checks she was always joined by her husband or by another man soon after she left the store. This would suggest that these men were acquainted with her doings while in the store, and probably had suggested the forged checks as a means of obtaining money. Now take a person morally depraved as this poor unfortunate creature is, and he becomes the dupe of every designing individual who happens to have influence over him.

CASE III.—The third case that I report is quite brief. It is in relation to the criminal action of a morphine-habitué, a young man, whose family and personal history I was unable to obtain, further than that he had been accustomed to the free indulgence of morphine for eight or ten years, and during the last two or three years preceding the crime had been in the habit of taking from twenty to thirty grains of morphine daily. He was accompanied by two young men to a second-hand clothing store, obtained a suit of clothes for which he was to pay six dollars, produced a check drawn in his favor for twelve dollars, signed it, and received six dollars in change. Nothing wrong was observed with the young man during the transaction. Shortly after this the check was found to be worthless, and the man was arrested. He denies having any knowledge of obtaining either clothes or money on the check, although it was proved that he had obtained both, and had written the check himself. The plea of amnesic insanity was set up by the defence, on the ground that he had taken about ten grains of morphine just before the transaction.

I was appointed by the court, at the request of the defence, to testify in regard to the man's insanity at the time of the transaction, and in regard to the influence of morphine on the mind. I found that the man remembered almost everything that occurred on the day of the alleged transaction except the transaction itself.

After giving the attorney for the defence my opinion in the case, and telling him that I should have to testify in the main against his client, I was requested by him to take the witness-stand. He asked me only one question: the influence upon the mind of the free and prolonged use of morphine. I testified, of course, that it made a moral wreck of a man and lessened and destroyed his self-control. On cross-examination I was asked (although the defence objected to the question) the immediate influence on the mind of the usual quantity taken by morphine-habitués before the period of stupor was reached. I answered that it brightened and quickened the intellect, improved the memory for the time being, and put the opium-user in the best possible mental and physical condition. I was asked if the habitué of morphine knew right from wrong under such circumstances. I answered that he would distinguish quite clearly, although he might be unable to resist doing wrong. The young man was convicted and sentenced to the penitentiary.

I believe that this man was a tool in the hands of his two evil companions. They probably planned the crime and he carried it out. He probably realized that he was doing wrong at the time of the act, but moral control was gone, and the hope of obtaining money for further indulgence in morphine made him a ready victim for almost any crime suggested to him.

CASE IV.—The fourth and last case that I report requires a little more careful study than Case III.

The patient is a young man of twenty-two years of age, newly married, and of an intelligent, mild, and prepossessing appearance. He is a college-graduate, and has received a fairly good business education. He came to Denver about one year before his arrest in this city, and like the majority of people who do not belong to one of the three professions, he entered into the real-estate business. His life before coming here, so far as I was able to learn, had been exemplary. He met and married a young and rather prepossessing lady whom he had led to believe that he was doing a prosperous business and had become possessed of considerable wealth. He said that he was agent for a tract of land in Texas, for which he claimed that he would make twenty-five thousand dollars. He bought three houses and lots, for which he had no money to pay. He purchased expensive furniture for his office, and for this he gave a check on the bank in which he had formerly kept an account. His grocery bill amounted to seventy-five dollars. He drew a check payable to his wife on the same bank for more than the amount of the grocery bill, went with her to the groceryman, and had her pay his bill with the check. Within a few days he drew several checks for various small sums for debts contracted and purchases recently made. Suddenly he disappeared and was not found for several days. During this time the checks had been protested. He was found staying in the unoccupied houses which he had recently bought. He was arrested and committed to jail, and I was requested by the attorney for the defence to make an examination of his mental condition.

After inquiring into his life, habits, and mental

powers up to the time when he began to draw checks for which he had no money in bank to pay, I took up in detail, beginning with the first, each amount for which he had drawn worthless checks, and found that he remembered with remarkable accuracy the minutest circumstances connected with each transaction. He could give the amounts of each check, the date it was drawn, and for what the debt was contracted. When I asked him why he drew the checks when he had no money in the bank, his invariable reply was that he knew he had some nine hundred dollars in bank, and if the bank said he had not, it made a mistake. I asked him if his bank-book did not show that he had no money on deposit in the bank. He said it might, but that he knew the bank was mistaken, as he had deposited about nine hundred dollars in the bank since his book had been balanced. I continued my inquiries into the time (several days) during which his whereabouts had not been known to his wife or his friends. For this period he claimed to have no memory whatever.

On inquiry at the bank, I learned that he had not made the deposits which he claimed to have made, and that he withdrew his account from the bank some nine months before the fraudulent checks were drawn. I found that he remembered his arrest while staying in the unoccupied house, but he said he could not tell how long he had regained consciousness before his arrest.

Without going into the reasons for my opinion, I told the young man's attorney that I felt positive that his client was feigning. I heard nothing of the case until about three months after my examination, when I was summoned by the district attorney to appear in the criminal court to testify in a case of alleged insanity. On my arrival in court I found the case was that of this young man. The district attorney did not know that I already had knowledge of the case. During the progress of the trial I learned from witnesses who testified in the case that several of the statements which the prisoner had formerly made to me and his attorney were false. After adjournment of court I began an examination of the prisoner in the presence of his attorney, the office of the district attorney not being represented. I found the young man exceedingly nervous and despondent. Several developments in his case had occurred during the time that I had been in court which proved that he had not been truthful either with me or his attorney. I abruptly demanded of him to know why he had dealt falsely with his attorney and me, and told him that I feared it was too late to do anything for him, but advised him to tell us the whole truth and we would do all that we could for him. He expressed regret that he had not been truthful, and with tears in his eyes frankly acknowledged that he knew when he drew the checks that he had no money in bank, but excused his conduct on the ground that money was due and promised him, and he had expected to collect this and deposit it in bank before the checks were presented. Failing in this, rather than tell his wife and creditors his unfortunate condition, he had tried to secrete himself, when he was arrested.

It is needless to say what the verdict of the jury was.

We may inquire, What should be done with the criminal moral imbecile, or with the criminal moral reprobate caused by the use of alcohol or opium? Shall he be allowed to go free on the plea of insanity and irresponsibility? The community has certain rights as well as the individual, and those of the former are greater than those of the latter. It seems to me that the only feasible solution of the subject is to make all criminals who are not suffering from those forms of insanity that necessitate their confinement in an asylum responsible to the law for their conduct, but to modify the punishment according to the degree of self-control possessed by each class. Neither the insane asylum nor the penitentiary is a fit place for the moral imbecile, or for the criminal insane in general. It is an outrage to subject the insane to the constant presence and association of the criminal insane, and it is equally unjust and inhumane to confine the latter with the hardened criminal, such as are found in our jails and penitentiaries. Every State should have a separate place provided for its criminal insane.

Owing to the indefatigable and intelligent efforts of Dr. Peterson and his co-laborers in the cause, the State of New York is about to establish a home for its epileptic population. Let us hope that this good work may spread to every State in the Union, and that not only the epileptic but also the insane criminal, of which the epileptic population forms no insignificant proportion, may be equally well and suitably provided for.

THE ETIOLOGY OF GASTRIC ULCER.[1]

BY CHARLES G. STOCKTON, M.D.,
PROFESSOR OF THE PRACTICE OF MEDICINE IN THE UNIVERSITY OF BUFFALO, N. Y.

THE mucous membrane and the deeper structures of the stomach may suffer loss of substance from a variety of processes that may with truth be called ulceration. Thus, ulceration may take place from traumatism, corrosives, scalding fluids; from tuberculosis, syphilis, scurvy, or from serious blood-changes; from extensive burns, from continued pressure, and from other causes that disturb the nutrition of the part.

However, for an ulcer occurring most often in young women, which is usually round; having about it healthy mucous membrane; its margin being abrupt and clean-cut, so that in old cases it has a distinct punched-out appearance (as Rokitansky aptly describes it); generally found alone, but occasionally having one or two companions;

[1] Read at the meeting of the New York State Medical Association, in New York City, November 17, 1892.

located, as a rule, on the posterior wall near the pylorus, and often near the lesser curvature; almost invariably associated with an excessive secretion of hydrochloric acid, and not infrequently with anemia—which is called the "simple," the "solitary," the "round," the "perforating," the "peptic," the "ulcer of Cruveilhier"—for this there has been suggested no cause that is satisfactory, or that answers all important requirements.

It is not to be supposed that one can draw an uninterrupted and perfectly distinct line of separation between true round ulcer and all other forms of gastric ulceration. It is probable that in many instances the processes are so intermingled and confused that even the fullest knowledge of the facts would leave differentiation incomplete; but the fact must, nevertheless, not be lost sight of that in the classical "round ulcer" no theory of etiology so far suggested has proved to be altogether satisfactory. Before discussing this part of the subject, however, let us consider what we know of the causes of gastric ulcer in general.

It is widely believed that the bacilli of tuberculosis passing through the stomach may invade the intestinal mucous membrane, and yet that this organism, while not destroyed by the gastric secretion, has not been shown to be a cause of local trouble in the stomach. Notwithstanding this, there are now reported numerous authenticated instances of tuberculous disease of the stomach,[1] and occasionally extensive ulceration of the mucosa is seen.

Syphilis, according to histologic examinations made by Guozot,[2] has been shown to be a cause of ulcer, and Heller[3] thinks that syphilis plays an important rôle in congenital ulcer, of which a number of cases have been reported.

The disintegration of neoplastic tissue can scarcely be considered as ulceration of the stomach, although it is well known that carcinoma often finds its seat in the place of a preceding ulcer. Albertoni,[4] however, reports a case in which an ulcer was complicated with adenoma of the stomach, and believes that the ulcer resulted from a previous growth of this nature. Turner[5] describes a circumscribed superficial slough of the gastric mucous membrane in a man suffering from pyemia following a fracture of the tibia, and similar cases resulting from septic emboli have at long intervals been reported.

I have seen erosions of the gastric mucosa resulting from extravasations of blood into its substance, in cases of purpura and scurvy; and, according to Wales,[6] such lesions and even distinct ulceration are rarely absent in the latter affection.

Quioroza[7] reports cases of gastric ulcer resulting from dysentery, puerperal septicemia, and typhoid fever, and this author believes that the affection is the direct result of numerous diseases of the body.

An interesting and ingenious explanation of the affection is that given by Wiktorowsky,[8] who maintains that from chronic catarrh the establishment of the chronic interstitial process, up to perforating ulcer of the stomach, is but a continuous chain; but proof of this theory is wanting. Nevertheless, Peter[9] and others hold that round ulcer is the result of a preceding gastritis, and the increased local temperature is mentioned as evidence in that direction. It will be remembered that Cruveilhier[32] held to the inflammatory origin of the disease. There has been a general acceptance of the views expressed long since by Virchow, that the ulceration follows hemorrhagic erosions resulting from disturbances of the circulation; that "the interruptions of the circulation are for the most part due to morbid conditions of the gastric vessels, and particularly to a hemorrhagic necrosis of the mucous membrane." This hypothesis at once opens a wide avenue for causative factors, and if it were not for certain reasons, hereafter to be mentioned, the attempt to point out a special process in the development of the ulcer described by Cruveilhier would be profitless.

It is most natural and sensible to suppose that, given a hemorrhagic necrosis of the mucosa and the presence of the active gastric juice, the part would become digested, and the typical excavation, so well described by Rokitansky, would appear. This position is substantiated by clinical observations, post-mortem discoveries, and laboratory experiments, so that one cannot deny that ulcers are thus established.

In 294 cases, Berthold[10] found disease of the circulatory apparatus in 170; while Steiner reports such changes in 71 cases out of a total of 110, finding particularly endocarditis, endaortitis, and endarteritis. Thrombosis in various parts was demonstrated 48 times. Litten[11] saw a perforating ulcer with a thrombus in the splenic artery, and Janeway[12] describes a like case in which the ulcer was directly due to a fibrinous plug found in the gastro-epiploic artery. Provost and Cotard produced ulcerative changes in various parts of the alimentary canal by introducing tobacco seeds into the aorta, and other similar experiments are on record; and, as might have been expected, Letulle[13] claims to have established the infectious origin of the gastric ulcer.

By experimental means, hemorrhagic necrosis, and, later, ulceration, have by several investigators been produced in dogs. Ritter[14] succeeded by poking a dog's stomach with a cane, and Decker reports like results after feeding to dogs hot gruel. Quincke relates experiments on dogs with gastric

fistulæ, in which the mucosa was injured by pinching, excision, or by tying off small portions; by thermal irritation; by caustics.

The animals showed no subsequent distress, nor was the digestion impaired, but the ulcers disappeared after from four to twelve days, although the repair was delayed materially by rendering the dogs anemic by bleeding. Von Sohlern[15] thinks that a vegetable diet, by increasing the proportion of potassium salts in the blood, acts against the formation of ulcer, and he mentions the infrequency of the disease among vegetarian people. Silberman[16] repeated these experiments with modifications, and reached the conclusion that ulcer might be caused by arterial anemia, venous hyperemia, portal stasis, circumscribed hemorrhages, or reduced alkalinity, and suggested that the hyperacidity of the gastric juice might depend upon the lowered alkalinity of the blood. Ulcers following blows upon the abdomen in dogs[17] and men[18] are reported, and it is well known that the condition is often seen after severe external burns.[19]

Localized pressure as a cause is mentioned by Rasmussen,[20] and M. Pettit[21] has recently described a fatal case which apparently arose from pressure and rubbing exercised by a bony protuberance on the inside of the lower end of the sternum. Zielinski,[22] of Warsaw, in a recent paper, considers as a cause of gastric ulcer the narrowing of the lumen of the vessels of the stomach from traction made by enteroptosis. Duodenal ulcer not infrequently follows external scalds and burns,[23] and occasionally also the stomach is the seat of like lesions;[19] and severe injuries of various kinds, experimentally made upon animals,[24] have been followed by hemorrhagic necrosis in various parts of the body and in the stomach by ulcers.

Precisely how these changes are brought about is not clear, and it is therefore not surprising that, as Niemeyer has suggested, the nervous system may be a possible factor in the process. Indeed, it was with this in mind that Ebstein made the experiments just alluded to, which were a part of a series of investigations undertaken to show the relation that exists between certain severe injuries and gastric ulcer. Repeating the well-known experiments of Schiff, Ebstein reached somewhat different conclusions; but in the main, both of these investigators agree that injury to certain parts of the central nervous system (optic thalamus, pedunculus cerebri) is competent to establish ulcus ventriculi. Similar results followed a half section of the spinal marrow, and any great and often-repeated irritation of the sensory nerves led to quite uniform changes in the gastric mucosa. Talma[25] was able to produce ulcer by exciting spasm of the muscular coat of the stomach, through prolonged stimulation of the left vagus. He suggests that the so-commonly-present hyperacidity may thus affect the pneumogastric. Apparently this throws light upon the mystery of the relation between external burns and ulcer, and is at any rate highly suggestive of a possible nervous cause operating in cases seen clinically.

Whatever the exciting cause, the lowered alkalinity of the blood on the one hand and the excessive acidity of the gastric juice on the other are generally acknowledged to be active contributing causes. Pavy[26] teaches that the normal alkalinity of the blood successfully opposes ulcer, by preventing the autodigestion of the stomach. This self-preservation on the part of that organ has been shown not to be dependent upon this condition, however, since Samuelson made the blood neutral, and yet the stomach continued to resist its own secretions. This fact throws discredit upon the theory so long and securely taught by Cohnheim,[27] and we must now conclude that in such investigations as these of Silberman's[40] the resulting ulcers were from some other change in the blood besides the mere lowering of its alkalinity. The views of Ewald,[41] that the blood-changes, to be operative, must be such as lower the resistance of the living cell, are more acceptable. There is apparently a close relation existing between the lowered alkalinity and the hyperacidity. The intimacy of the relation pointed out by Pavy has been acknowledged by many. Grime[42] quotes fifty-three cases of ulcer, all of which had hyperacidity, and concludes that it is due to the preceding chlorosis, and that, with those two conditions present, the slightest injury to the mucous membrane may form the focus of an ulcer.

Riegel[43] and his students insist that the great excess of hydrochloric acid is the invariable accompaniment of gastric ulcer; and while this accords with my own experience, and undoubtedly is true of classical ulcer, there are undoubtedly cases, as shown by Ewald,[44] that are not only without hyperacidity, but even show hypoacidity. The importance of the acidity in delaying the healing, is, as Riegel states,[45] very great, and that it has a marked influence in establishing the lesion is most probable, but the fact remains that ulcer may exist and persist without hydrochloric acid, just as it may appear in those who have not antecedent anemia.

In view of the foregoing facts, necessarily stated incompletely and with brevity, it seems justifiable to suppose that while ulcerative processes dependent upon tuberculosis, syphilis, pyemia, scurvy, and other serious dyscrasias, may proceed in the gastric mucosa, and while simple anemia with lowered alkalinity of the blood assists the process, while hyperacidity of the gastric contents greatly favors the change, there must still be some other as yet un-

known cause which in a certain group of cases leads to the necrosis, besides the accidental changes from thrombi and emboli, such as have already been cited above.

The reasons for this claim are: First, that the affection shows itself particularly in adolescence or before middle age, when there is the least probability of vascular changes; second, that it appears most frequently in women, who are less often subjects of arterial diseases than men; and third, because, with remarkable frequency, the ulcer selects for its site the lesser curvature and posterior wall of the stomach near the pylorus, a portion of the economy that is not often invaded by emboli, and a region of the stomach especially rich in anastomosing vessels. In a large number of cases Buchmüller[46] found over 93 per cent. on the posterior wall near the lesser curvature, and no certain cases under fifteen years. In the Berlin statistics not one case was found under the tenth year, and the greatest number between the twentieth and thirtieth years. It is occasionally congenital,[50] and one altogether exceptional case was found in a man, said to be one hundred and twenty years old.[51] Greiss[47] found from three to five times as many scars in women as in men, and over 90 per cent. appeared on the posterior wall near the lesser curvature; and although many of these appeared in middle, and a few in advanced life, the beginning of the trouble was doubtless in earlier life, as Leube[48] has pointed out. Statistics abound in similar statements, as may be learned by consulting Welch's splendid monograph in Pepper's *System of Medicine*.

From the foregoing facts, namely, the propensity shown by the affection to select a certain site in females, and to appear in early life, has naturally arisen the suggestion that this form of ulcer may take its origin in some unknown but definite neuropathic change—trophic, vasomotor, or both of these. It has seemed to me remarkable that this view has not gained more adherents, since by no other evident hypothesis can these points in its natural history be explained.

In reflection on the matter, it has occurred to me that somewhat analogous processes are to be witnessed in other parts of the body, and that by using these as illustrations some insight into the pathology of round ulcer may be gained. For instance, the well-known proclivity of herpetic eruptions to attack particular points under especial conditions is brought forward, and attention is called to this common disease, that, depending upon nerve abnormality, is found, not only upon the skin, but upon the mucous membrane of various parts, including the mouth and throat, with a view of asking whether it might not select for its appearance the pyloric extremity of the stomach, and so lead to ulcer.

Again, there is something most suggestive in that extraordinary disease known as idiopathic hematoma auris, which is seen not infrequently in the insane, which invariably appears in the concha, rapidly reaches maturity, and disappears only after destruction of tissue and marked cicatricial deformity. It is interesting to note that the affection has been seen occasionally in those having no mental disease, or other known disability.[49] In a recent paper on this subject, Dr. H. G. Matzinger refers to the complex nerve-supply of the ear, with especial reference to the sympathetics, and concludes that othematoma is a neuropathic affection, seen generally, but not invariably, in those suffering from central nerve disease, in which the sympathetic system is seriously involved. Why might not some similar process have for its local expression the posterior wall, or lesser curvature of the stomach near the pylorus, than which no part of the economy has a more complicated and involved innervation?

One is led also to think of the striking manifestations in that curious affection, Raynaud's disease, with its predilection for the fingers and toes, with its advancing steps of syncope, asphyxia, and necrosis of the parts.

It is not impossible that asphyxia of certain spots of the gastric mucosa may occur from analogous causes, whatever they may be, and the tissue thus put to a disadvantage would be well calculated to suffer erosion from the active gastric juice.

If Morvan's disease is not found to be a phase of syringomyelia, it also might be advanced as an instance of local necrosis, something like that which may appear in the stomach.

A few years ago I saw at the clinic of my colleague, Professor Roswell Park, a case of intense interest, that of a neurotic girl, who had a series of painful and persistent ulcers along the forearm and the leg, following the tracts of certain nerves. The parts bordering the ulcers were uninvolved, and in every way healthy; the ulcers themselves followed the appearance of limited gangrenous spots; they were deep, with abrupt walls, and were exquisitely sensitive. They had for years resisted the treatment by very able men, but those on the arm were permanently cured by a thorough stretching of the external cutaneous nerve, practised by Park. There was something about the appearance of these ulcers that reminded one of the typical round ulcer of Cruveilhier, and it does not seem to me absurd to suppose for the latter a somewhat similar origin.

In concluding this view of the subject, it appears natural to assume that the stomach, like other parts, may suffer loss of substance from a variety of causes; but as regards simple round ulcer, it must have a more precise and definite etiology.

Unquestionably, the impoverished condition of

the blood, leading to lowered resistance of "the living cells," and the persistent presence of hyperchlorhydria, must of necessity put the tissues to severe strain—but there is wanted yet another factor. The object of this paper is to suggest that, by the influence of some process analogous to herpes, or to idiopathic hematoma auris, or to Raynaud's disease, or to herpetic gangrene—some distinct and persevering nerve-perturbation — we may best explain the recognized but unaccounted-for feature of the clinical history as to location, age, and sex.

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PNEUMOTOMY TWICE IN THE SAME PATIENT FOR THE RELIEF OF TUBERCULOUS ABSCESS AND GANGRENE OF THE LUNG; RECOVERY.[1]

BY JOHN BLAKE WHITE, M.D.,
PHYSICIAN TO CITY HOSPITAL, ETC., NEW YORK.

UP to a period not quite twenty years ago the annals of surgery had been silent respecting operative procedures on the lungs. Dr. Rickman J. Godlee, a well-known authority on this subject, regards surgical treatment of pulmonary cavities as still in its infancy, but believes that in a certain class of cases the measure will advance in efficiency as it will assuredly in frequency. It is quite true, nevertheless, that the great Father of Medicine two thousand years ago referred to abscesses located within and without the lung-structure, and even defined the point of selection for operating and draining them; but we owe to Estlander the credit of first originating and establishing, in our day, surgical treatment for defined diseases of the lungs.

In this class of cases prompt and correct diagnosis is a condition essential to cure. As soon as the character of the case is determined, operative procedure should be instituted without delay—as, while it is quite true that ordinary abscess of the lung may terminate in recovery, no case of gangrene of the lung has been known to recover without surgical interference.

Before describing a remarkable case of recovery from gangrene of the lung, through surgical resort, in my own experience, I deem it appropriate to briefly allude to a few selected experiences related by other surgeons in the same direction; and I purposely exclude all empyemas, confining my remarks exclusively to strictly pulmonary abscesses.

Morton, of Philadelphia, in his work on *Consumption*, in 1837, has related a very interesting case of tuberculous abscess of the lung, communicating by a fistulous canal with an abscess on the back, resulting in death, which, if treated with our present knowledge and boldness in managing such cases, would in all probabilty have terminated in recovery.

The patient was admitted to the hospital February 1, 1833. During the previous year he had had a slight cough, and severe pain between the shoulders, especially on the right side, accompanied by hemoptysis. The pain continued, and after a time a swelling appeared on the right side of the

[1] Read at the meeting of the New York State Medical Association, held in New York, November 15, 16, 17, 1892.

chest posteriorly between the base of the scapula and the spine, and this continued to increase in size.

After two months the symptoms became aggravated, active hectic set in, and the expectoration was profuse and purulent, with occasional hemoptysis. Anorexia, emaciation, and great debility supervened. The tumor was elastic, evidently containing air, and was tympanitic on percussion. Treatment by internal medication for six weeks resulted in no improvement, till the apex of the tumor ruptured spontaneously, discharging a large amount of fetid pus of the same character as that expectorated. The opening was then enlarged and a pint of pus escaped; the patient obtained great relief, but the case being left to Nature entirely for so long a time, the benefit was but temporary; the patient in four days became delirious and died, no doubt from septicemia. At the autopsy a fistulous opening was found extending directly from the pulmonary cavity to the dorsal abscess.

Dr. Samuels[1] has related the history of a patient at the London Chest Hospital, who came complaining of cough, pain, and dypsnea. On examination he found absence of chest movement of the left side, with anterior and posterior dulness, tubular respiration, and increased vocal fremitus. The temperature rose in a few days to 103.8° and soon fell again. Night-sweats and free fetid expectoration very soon set in. Upon inserting an aspirating needle between the fifth and sixth ribs two ounces of fetid pus were withdrawn. At the point of puncture tumefaction followed, so that a free incision was subsequently made, liberating about three ounces of pus. The cavity was washed out and drained. Subsequently a portion of the seventh rib was resected and a cavity the size of an orange was discovered in the lung. The patient suddenly died on the fourteenth day in an attack similar to an epileptiform seizure, followed by paralysis of the right arm.

Dr. A. V. Meigs[2] has reported the case of a boy, eight years old, who had been ill for three years, commencing with an acute attack in which an abscess of the lung developed. Examination of the right lung revealed dulness in the region of the third rib, with a cracked-pot sound, extending down to the liver. The respiratory sounds were harsh; expiration was prolonged at the base of the lung posteriorly, where the respiration was feeble and harsh, with dulness over this area also. Large quantities of pus were expectorated after violent paroxysms of coughing. Dr. Meigs believed from the symptoms and the distinctly clubbed fingers that there was a cavity in the chest containing pus. An incision was made, free drainage established, and the patient recovered.

The following case of gangrene of the lung cured by a surgical operation has been reported by Drs. Paul and Perier:[3]

A man, aged fifty-eight years, was attacked in June, 1891, by a severe bronchitis, soon resulting in fetid expectoration. The presence of a focus of disease was revealed on auscultation, situated over the middle of the left lung, and characterized by a large zone of very fine râles. Antiseptic inhalations were resorted to, without preventing the progress of the disease, which evinced all the symptoms of gangrene. By December, symptoms of septicemia became alarming. Cavernous sounds were most intense over the second intercostal space. Dr. Perier made an incision through the intercostal space and pleura, seized the lung with a pair of fine forceps and kept it in contact with the parietal pleura. An incision was then made into the lung, which showed healthy tissue; a Lister forceps was thrust into it in the direction of the abscess and withdrawn with the blades expanded so as to leave a free exit to the pus. On introducing the finger a round opening was felt. This cavity was dressed, after cleansing with a cotton tampon soaked in a solution of one per cent. of chloral, and afterward touched with camphorated naphthol. Two drainage-tubes were inserted side by side and the wound closed. Air circulated through these tubes freely at each inspiration and expiration. The fits of coughing ceased at once, the odor disappeared from the sputa, and fever subsided. Improvement progressed steadily. Two weeks after the operation the drainage-tubes were replaced by a piece of salol-gauze, and at the end of seven weeks the wound had healed and the patient was completely restored to health.

Dr. Runeberg,[1] of Sweden, has described a case of successful pneumotomy for pulmonary abscess following pneumonia, and he has collected the reports of eleven cases similar in character. Discarding three of the eleven cases on account of uncertainty of diagnosis, five of the remaining eight recovered, three resulted fatally, though not as a result of the operation. He believes pneumotomy indicated when the diagnosis is clear and the abscess is accessible; but he deprecates the use of antiseptic irrigations, and thinks thorough drainage sufficient. Among other authorities may be mentioned Dr. Arthur Neve,[2] who has reported a case of abscess affecting the upper and anterior part of the right lung successfully operated upon. Drs. Bearman and Pengrueber[3] have reported a case operated upon for the relief of an abscess located in the middle portion of the right lung. Thiriar[4] has operated upon a case successfully for the relief of an empyema communicating with an abscess-cavity in the right lung. Dr. Pasteur[5] records a very interesting case of gangrene of the lung in a boy seven years old, which was subjected to operation. The amount of repair which took place under unfavorable circumstances was most encouraging, though the case proved

[1] Medical Press and Circular, 1887.
[2] Archives of Pediatrics, 1887.
[3] Bulletin de l' Académie de Médecine.

[1] London Medical Record.
[2] London Lancet.
[3] New Orleans Med. and Surg. Journal.
[4] La Semaine Médicale.
[5] London Lancet, Oct. 20, 1889.

fatal. He expresses the opinion that an operation performed earlier might have saved the patient's life.

A very interesting case of pleuro-pneumonia, followed by gangrene of the lung and abscess, upon which he operated with success has been reported by Okell.[1]

The following case of abscess of the lung, reported by Dr. Francis Huber,[2] terminating in recovery after operation, is also of interest:

A boy, four years of age, had been ill for nearly a month. When first seen, October, 1888, he had fever, irregular chills, and distressing cough. Physical examination proved negative, except as to the presence of an area of flatness, with distinct bronchial breathing, in the right infra-clavicular and mammary regions. Pus was obtained by an exploratory puncture. When an incision was made, pleural adhesions were found, and pus was discovered in the substance of the lung. The cavity, having been drained, subsequently contracted, a small fistula remaining for about ten months. Some difficulty was experienced in locating the cavity after the thorax was opened. No bad results followed irrigations of the cavity; forcible injections, however, occasioned paroxysmal coughing, which ceased when the injected fluid was expectorated—indicating its admission into a bronchial tube.

The 8th of April, 1890, Miss A., aged thirteen years, having a tuberculous family history, was attacked with croupous pneumonia, involving especially the right lung. During this illness she was under the care of Dr. T. A. Pease, of Norwood, N. Y. At a critical juncture she was seen in consultation by Dr. J. Reynolds, of Potsdam. The case ran a favorable course, and, as Dr. Pease reported, reached a crisis on the morning of the ninth day after the attack, when resolution set in, and the patient rapidly recovered. The temperature, circulation, and respiration became normal within three weeks. After recovery there remained no cough and no expectoration, except that resulting from chronic catarrh of the air-passages, to which she had been subject since she was three years of age.

At the end of the second week of convalescence the pyrexia returned, the temperature rising to 102° F.; the respiration became more labored, the cough spasmodic, the expectoration difficult and scanty, and the pain and tenderness about the side affected more pronounced. Dulness upon percussion now extended from the angle of the scapula upward until it involved the entire lower half of the lung, both anteriorly and posteriorly.

The case was now believed to be one of interstitial pneumonia, with fibroid degeneration and infiltration. This condition, with temporary improvement and relapses, and with marked disturbance of the digestive functions, continued until the case passed out of the hands of Dr. Pease.

The care of the patient next devolved upon Dr. Reynolds, of Potsdam, who continued attendance until January 1, 1890, when the patient was taken to the Adirondacks for several weeks, whence she was brought to New York. Soon after her arrival in New York I was summoned to see her, and upon examination I found her suffering from an acute broncho-pleuro-pneumonia, engrafted upon an old unresolved pneumonia, which had degenerated into a fibrosis of the right lower lobe, involving part of the middle lobe. She was under my care about two weeks. After she had recovered sufficiently from the attack, she was carried to Thomasville, Georgia, where, under the care of Dr. Cortelyon, she remained until the end of the following spring, when she returned to Norwood. Soon after her return home she was again placed under the care of Dr. Pease, from whom I received the following account of her condition:

"Miss A. coughs less than before her trip South, and her respiration is improved, though marked dulness is present over the central portion of the right lung, with loud, moist râles heard on auscultation. Last evening she was brought into my office retching, vomiting, coughing, and expectorating an intolerably fetid, greenish matter. She continued to expectorate a large amount of this offensive sputa, and was frequently harassed by violent paroxysms of coughing, accompanied by violent irritation of the fauces, with frequent emesis."

All internal remedies, judiciously and skilfully employed by Dr. Pease, having proved unavailing, and the case intensifying in gravity, a consultation was determined upon, and I was called to Norwood. On my arrival, July 26th, 1890, I proceeded to examine the patient, and Dr. Pease and I came to the conclusion that a large area of the right lung had become gangrenous, that an abscess had resulted, communicating with a bronchus. An exploratory puncture was made, which resulted in fortifying the conclusion we had arrived at. The patient presented a pinched and extremely cachetic appearance—indeed, her condition seemed in every respect so critical that we thought no time should be lost, and decided to operate at an early hour on the following day.

Assisted by Drs. Pease and Larkin, the patient being put under the influence of chloroform, I proceeded to make an incision in the sixth intercostal space, about one inch anteriorly to the axillary line. The different layers of tissue, including the pleura, were in turn divided, and a careful examination of the seat of lesion was made. The finger was pushed through the intercostal space, and came in contact with the smooth outer surface of the condensed lung. A fluctuating point was discovered, into which the knife was directed. This liberated about two ounces of very fetid pus, having the same odor as that which had been expectorated. The wound was next irrigated with an antiseptic solution, a drainage-tube was inserted, and antiseptic dressings were applied.

The patient slowly rallied, with the aid of hypodermatics of brandy and digitalis. There was

[1] London Lancet, 1888.

[2] Archives of Pediatrics; THE MEDICAL NEWS, October 17, 1891.

immediate relief of all distressing symptoms, and after a few days of depression she began to improve, and continued to gain strength until the discharge ceased.

The cavity continued to drain until, at the expiration of two months, the discharge was so much reduced that it was judged expedient to remove the tube. A month after the removal of the tube urgent symptoms set in. Distressing paroxysmal cough, fever, and greenish fetid expectoration, so offensive in character that it often excited nausea and vomiting, again imperilled the patient's life.

Dr. Pease discovered an area of dulness on the posterior aspect of the lower lobe of the right lung, and again summoned me to visit the patient, which I did on the 22d of September, 1890. Upon examination, I found quite a favorable condition about the seat of the previous operation, but discovered a region of decided dulness in the posterior part of the lower lobe, extending under the angle of the scapula upward. An operation similar to the first appeared necessary. With the assistance of Dr. J. Reynolds, of Potsdam, and Drs. Pease and Larkin, of Norwood, I reopened the thorax an inch posteriorly to the axillary line, meeting with the same condition of the lung as at the first operation. On opening the cavity, several ounces of very fetid pus escaped, with fragments of necrotic tissue, and a piece of gangrenous lung-tissue, having the appearance of the remains of a well-defined ruptured bronchus. A good-sized soft-rubber tube was inserted, and after thoroughly washing the wound with an antiseptic lotion, appropriate dressings were applied. For three weeks the pus, which drained freely, was very fetid, but the patient was immediately relieved of cough, expectoration, and septicemic symptoms.

Air circulated freely through the drainage-tube, upon both inspiration and expiration, and often during the process of irrigating the cavity the antiseptic solution would be coughed up.

The drainage was kept up for a period of eight months before the tube was removed. The patient is now restored to a condition of health superior to that enjoyed in early childhood—two years having elapsed since the last surgical procedure. Dr. Pease wrote me that menstruation, which had been arrested during her illness, became reëstablished the November following the last operation, and was accompanied by a marked disturbance of the whole system. The clubbed finger-nails which had so disfigured her hands had disappeared. She is able to take a full amount of exercise, and her present physical condition is one of perfect health. In this case regular irrigations of a mild solution of hydrogen dioxide were practised with much benefit.

There is every reason for the exercise of great care and caution in the irrigation of pulmonary cavities. The danger of the frequent and indiscriminate irrigations of pus-cavities in the lungs is strikingly shown in the case reported by W. Pasteur,[1] of London, in which the patient was signally relieved by the operation, but sank rapidly on the tenth day.

[1] British Medical Journal, October 20, 1888.

Bowditch, of Boston, condemns too diligent washing out of pus-cavities, pulmonary and pleural, an opinion which meets with my support; and he further ventures the statement that the proportion of cases in which irrigation might be required is possibly one in four hundred. I am, however, of the opinion that in gangrenous cavities, such as the one under consideration, irrigation is safer than in cavities emitting more laudable pus. I have in consultation seen an instance of metastasis to the shoulder joint promptly follow irrigation of a pleural pus-sac, which occasioned a most serious involvement of the joint, requiring an operation for its relief. The patient, however, ultimately made a good recovery, without any impairment of the use of the joint.

In the performance of all operations on the lungs the strictest and most diligent observance of antisepsis should be unfailingly carried out.

Cases of gangrene of the lung are never too far advanced for surgical interference, even though presenting evidences of profound septic contamination.

Spillman and Haushalter consider it necessary to excite adhesion of the pleura before operating, but I do not consider this an essential procedure; and though it may be a more favorable condition under which to operate, delay for pleural adhesion to occur might prove, in some instances, decidedly unsafe. Resection of a rib is seldom required in the very young, except to facilitate the discovery of abscess in doubtful cases.

A corrugated white-rubber tube, to the value of which my attention was called by Dr. E. H. Grandin, better meets the requirements in these cases than the ordinary soft-rubber drainage-tubes commonly made use of. The former do not so readily yield to the pressure of granulation-tissue, and, therefore, maintain drainage more satisfactorily and for a longer time.

1013 MADISON AVENUE.

MITRAL STENOSIS IN PREGNANCY; WITH CASES.[1]

BY Z. J. LUSK, M.D.,
OF WARSAW, N. Y.

THE question as to matrimony with women having unmistakable organic disease of the heart can admit of but one answer, and that emphatically in the negative. Rarely is a physician's consent or advice sought by the contracting parties, for the very good reason, in the first place, that nearly always the disease is unsuspected, there being no signs denoting a perverted state of the health; and secondly, if there were such signs, the young Juliet would prefer

[1] Read at the meeting of the New York State Medical Association, held in New York, November 15, 16, 17, 1892.

taking the chances of married life, rather than the opprobrium of ultimately evolving into that state which bears the euphonious title of "old maid."

Under the subject of Cardiopathia and Pregnancy, Dr. Parvin[1] quotes Jaccoud as asking the question, "Has the patient suffered from a cardiac lesion?" "If she has never suffered, he sees no reason to forbid marriage," but adds, "Her social condition must be considered." "If she has to work during pregnancy there is much to be feared, but if she can be properly cared for, follow medical advice, and pass the last half of her pregnancy in almost absolute rest, she may marry." Jaccoud further relates a case in his private practice, in which a "young lady had for eighteen months ardently desired to marry, and that, had a negative answer been given, mortal syncope might have followed." The fallacy of such an argument is too apparent. The chances of mortal syncope following a refusal to permit marriage would be more favorable than those of syncope attending the cardiopathies in the pregnant state. The augmented duties of the married woman, the painful consequences following pregnancy and maternity, and the alarming infant-mortality—all of these should be sufficient to dissuade the most sanguine, and to clear all doubts about entering upon the married state. It would be a great error to assume that a woman could safely marry if not at the time suffering from the valvular disease, nor would her environment permit of favorable consideration.

If stenosis of the mitral valve is present, serious trouble will certainly develop as soon as the heart is called upon to perform the increased work incident to the last months of pregnancy. The demands upon the maternal system begin about the sixth month; subsequently to this time great changes continually occur. The enormous development of the gravid uterus, with its intricate vascular apparatus, as well as the growing fetus, calls for an increased amount of blood, the normal constituents of which are undergoing change, the solids diminishing while the liquids increase in quantity. While there is an augmented supply of blood,[2] "the frequency of the pulsation of the heart remains unchanged. For this alternate contingency dilatation of the cavities becomes a necessity, and for the same reason, arterial tension is increased." It is plainly evident that the hitherto weakened heart must begin to show evidence of overwork.

Mitral stenosis is essentially a disease of women and children, and the diathesis to which a majority of cases owe their origin is the rheumatic. It may in some instances owe its etiology to chorea from neurotrophic disturbances. Loomis[3] asserts that such cases are confined to children, and recover after a few years. Duroziez[1] discourages the theory that mitral stenosis, pure and simple, is of rheumatic origin, and records eight cases occurring in children, but adds that they were subject to rheumatic attacks later in life.

The object of this paper is not so much to discuss the etiology of mitral stenosis, as to consider the management of such cases when they occur to us in actual practice. They are almost always emergency-cases, desperate in character, and demand the best energy and the most prudent management of the physician. Fortunately they are of rare occurrence. In the last eighteen years I have had upward of twelve hundred cases of labor, and among this number only two of mitral stenosis. There have been the usual number of those who gravely assert that they have heart-disease and cannot take anesthetics. There are also cases in which physicians have accepted the statements of patients, without making careful physical exploration, and thus often nourish the belief that there is organic trouble, when careful examination fails to discover the physical signs, and their long-cherished ideas are exploded. Sir Andrew Clark describes six hundred and eighty-four cases of valvular disease occurring in his private practice in the year 1887, and says that "in a large majority of these cases the disease was unsuspected."

The symptoms of mitral stenosis are few. The most characteristic phenomenon is described by Loomis[2] as a loud churning, grinding, or blubbering presystolic murmur. It is of longer duration than any other cardiac murmur, on account of the time required for the blood to pass through the narrowed and obstructed orifice. It ends with the commencement of the first sound. The apex-beat is synchronous with the purring thrill. The murmur is heard with maxium intensity a little above the apex-beat.

CASE I.—On May 5, 1890, I was called to see Mrs. K., a primipara, aged thirty-one, well developed, and weighing about 135 pounds. The environment was all that could be wished. I was informed by her husband that she was seven and a half months advanced in pregnancy, and that she had been unusually well until about a month before, when she began to have gastric disturbance, more or less nausea, with the bowels constipated, and not readily responding to laxatives. I learned that her brother (who was a graduate of the University Medical College of New York, but not at the time engaged in the practice of medicine) had occasionally seen and advised her. Indeed, up to this time no other medical aid had been sought. I found the patient sitting up, pale, and complaining of intense nausea, almost con-

[1] Annual of the Universal Medical Sciences, 1888, vol. i, p. 192.
[2] Lusk's Midwifery, p. 98.
[3] Pepper's System of Medicine, vol. iii, p. 666.

[1] Annual of the Universal Medical Sciences, 1888, vol. i, p. 192.
[2] Pepper's System of Medicine, vol. iii, p. 668.

stantly retching, and occasionally vomiting whitish mucus tinged with bile. The stomach rejected everything taken, even to water. The pulse was rapid and weak, the respiration hurried, the tongue moist and covered with fur, the breath offensive, and the bowels had not moved for several days. She also complained of sleeplessness. I advised an enema of warm water and soap, a sinapism applied over the epigastrium, cracked ice p. r. n., and also prescribed small doses of fluid extract of ipecacuanha, gtt. xv to half a glass of water, and of this gave a teaspoonful every fifteen minutes. This has often relieved the distressing nausea of pregnancy when other remedies have failed. To the question whether she had any heart-disease she gave a negative answer, and said that if her bowels could only be relieved she would be all right. I also left a powder of sulfonal to give her sleep.

On the following day her husband informed me that the enema had been followed by negative results; that the nausea was better; she had rested better and was more cheerful. I was requested to consult with her brother, Dr. Gouinlock, whose idea of the case was that she had worn very tight-fitting corsets and that she was now paying the penalty, the gravid uterus encroaching on compressed organs, and he knew of nothing to relieve her condition. I advised pil. cathartic. co. to move the bowels, and potassium bitartrate, a teaspoonful in a glass of water, and of this a dessertspoonful once in two hours. I did not see Mrs. K. at this time, nor again until Friday evening the 8th, when I was hastily summoned. I found the patient in bed, very much exhausted, the countenance pale and pinched, the pulse 130, rapid and weak, the respiration 38, and constantly retching. Dyspnea was marked. There was no edema of the extremities. Dr. Gouinlock was present. I advised a hypodermatic injection of morphine and atropine, gr. $\frac{1}{4}$ and $\frac{1}{150}$. Dr. Gouinlock informed me that the family was very susceptible to the effects of morphine, and objected to giving more than one-tenth grain. I considered that her condition of extreme prostration required more heroic treatment, and advised the repetition of the dose until complete quiet was secured. No examination of the heart was made at this time; the patient was very restless and tossing about in bed. The urine showed no traces of albumin. Dr. Gouinlock was left in charge of the patient during the night. I was hastily called again about 1 A M., and was told that Mrs. K. had had a sinking spell. On arrival, I found her unconscious, the face and extremities bathed in cold perspiration, and in extreme collapse. There was no pulse at the wrist, and the respiration was slow and intermittent. I learned that she had continued restless up to a few moments before, when suddenly the head drew back, the body became rigid, and she had a regular tonic spasm. She was pale and colorless; the heart was now beating and pounding tumultuously; nothing but a churning sound could be heard.

At this juncture Dr. M. D. Mann, of Buffalo, N. Y., was summoned by special train, and arrived in about two hours. In the meantime I began the administration of chloroform, the color gradually returning to the face, the heart becoming steadier, the pulse appearing at the wrist, and when spoken to the patient moved the eyes and apparently became conscious. On examination of the heart there was a loud presystolic murmur, with an occasional clacking sound. On palpation a distinct purring thrill was communicated to the hand. Digitalis and brandy were given hypodermatically. Under this treatment her condition continued to improve and things began to look more hopeful, when suddenly the eyes were drawn upward, the head backward, and tonic spasms of the whole body followed, lasting about two minutes. Respiration became apparently suspended. The beating of the heart became loud and tumultuous, cold perspiration again appeared upon the face and extremities, and she had every appearance of rapidly sinking. The muscles, however, soon began to relax, and under chloroform-inhalation the heart became less tumultuous, and color again returned to the face. I repeated the former treatment. At this time I made examination *per vaginam*, and found the os dilated, easily admitting the middle and index fingers. Chloroform was administered and I began dilating the cervix, which yielded readily. In the meantime Dr. Mann arrived, verified my diagnosis, and continued the treatment. About 4 A.M. another spasm ensued, lasting about one minute. The patient rallied slowly from this. Dr. Mann continued the dilatation, and when sufficient to permit, he applied Tarnier forceps and she was soon delivered of a stillborn male child. The patient did not rally, but gradually sank and expired about 5 A. M.

CASE II.—Mrs. H., primipara, a well-developed Englishwoman, twenty-nine years of age, had one miscarriage two years before at three and a half months. Her husband was in poor circumstances and she was obliged to work. She was seven months advanced in pregnancy, and had been doing well until two weeks before, when she had an attack of fainting, as she termed it, and following this she had nausea and vomiting, which continued up to the time I was called. She had also been troubled with a hacking cough. Her tongue was moist and covered with brown fur, the breath was very offensive; the bowels constipated; the pulse 140, the rhythm being regular. Dyspnea existed, and she also complained of sharp pain in the precordia. On palpation there was a distinct purring thrill communicated to the hand and diffused over the apex. There was no increased area of dulness. Near the apex a loud, prolonged presystolic murmur could be heard. The apex-beat was synchronous with the purring thrill. Dr. Loomis[1] holds that the diagnosis of mitral stenosis depends upon the existence of two physical signs, viz., "the purring thrill and a loud, long blubbering presystolic murmur."

Examination *per vaginam* found the os slightly dilated, easily admitting the index finger. The patient was put to bed, an enema prescribed to move bowels, and morphine, gr. $\frac{1}{8}$, atropine, gr. $\frac{1}{150}$, were given hypodermatically, with fluid extract of ipecac, gtt. xv, in half a glass of water, a teaspoonful every

[1] Pepper's System of Medicine, vol. iii, page 667.

half-hour as required. Brandy and digitalis were also ordered. I called again on the morning of the 12th and found her condition better; the bowels had moved, and nausea was not as obstinate. I continued the remedies, adding aromatic spirit of ammonia. On the morning of the 13th there was less dyspnea; the pulse was 120; vomiting was less frequent; the temperature was 99°; and the heart's action was less tumultuous. She continued to improve until the 25th, when I discontinued daily calls. I had advised the family fully of her condition and the necessity of keeping her quiet. I was hastily summoned on the night of the 6th of January, being informed by the messenger that she had been doing some light work. On arrival I found her in complete collapse, the heart pounding tumultuously, with no pulse at the wrist, the face pale, and with an anxious expression. The respiration was rapid, and there was every indication of impending dissolution. I gave at once a hypodermatic injection of brandy and digitalis, ordering hot-water bottles to the extremities, and commenced the administration of chloroform, upon which color very soon began to return to the face, the heart became less tumultuous, the pulse returned to the wrist, and the patient began to show signs of consciousness, and noticed things; and in the course of an hour we were able to give by the mouth brandy, ammonium carbonate, and digitalis. I remained with her all night. She had three slight attacks of syncope during that time, when chloroform was again given, and was always followed by amelioration of the distressing symptoms. The tumultuous and angry heart would at once become more quiet and regular. In none of the later attacks did she become unconscious.

I saw her several times on the 26th, continued the treatment, and the nurse was instructed to administer chloroform when syncope threatened. She rested comfortably during the day, having two or three slight faining spells, but was generally better. The pulse was 120, respiration 30, temperature 99°, and the obstinate nausea was controlled by morphine and atropine. Nutritive enemata were advised, the brandy, ammonium carbonate, and digitalis continued. On the morning of the 27th the nurse said that the woman had slept some during the night, had had only one attack of fainting; the pulse was 126, the respiration 32, the temperature 99°. At this time she complained of a good deal of nausea and dyspnea. She said that she had felt no motion for two or three days. I found the os dilated, easily admitting two fingers. There was a vertex presentation, but no evidence of fetal life existed. I advised continuation of the remedies during the day. Her condition in the evening was less satisfactory; the pulse was weaker, 130; there was marked dyspnea; the respiration was 40, the temperature 99.8°. She complained of pain through the back. The nurse said that she had had slight chills during the day. The os was now dilated two inches, the cervix soft and yielding. I called again in about two hours. The pains had increased in the meantime and were unmistakably uterine. Hypodermatic injections of digitalis and strychnine were repeated every two hours. I now began administering chloroform, but not at any time in quantities to produce full anesthesia. Under its influence I hastened dilatation of the cervix, and when sufficiently dilated I applied forceps and delivered a female child that had been dead for several days. Once or twice during these maneuvers I was obliged to stop, on account of the patient fainting. Although extreme prostration followed, she gradually rallied under treatment. The convalescence from about the 10th day continued satisfactorily, and the patient was able to be about and attend to household duties in about six weeks.

Both cases had had attacks of rheumatism in childhood, but were not aware of any cardiac lesion.

It was said of the first case that she had suspected heart-disease, and had said that she would not allow herself to be examined for that trouble. I did not on my first visit examine the heart, though I should have done so. "Experience sometimes teaches dear lessons." It does not matter what the condition of the pregnant woman may be, or at what period he is called, the physician ought always to examine the heart and thus be prepared for any emergency, or indeed, if possible, to prevent an emergency likely to occur. I was dissuaded by the assurance that she had no such trouble, attributing her prostration to lack of sleep and to the obstinate vomiting. The cases of Sir Andrew Clark sufficiently prove the fallacy of accepting the statements of patients.

I believe that the only safe treatment prior to the fifth month in cases in which mitral stenosis is present, is in producing abortion. Dr. Mann fully concurred in this opinion. In both cases there was no impairment of health before the sixth month. It is at this time that heart-weakness begins. If the pregnancy is allowed to proceed, the chances are that the fetus will not survive the last two months. Children whose mothers are the victims of cardiac disease are often imperfectly developed, and are predisposed to untimely death.

The salutary effects of chloroform cautiously administered, especial care being taken not to push it to full anesthesia, were most perceptible. In both cases the pulse was at times small in volume, feeble in force, and irregular in rhythm; respiration was irregular, the heart tumultuous in action. Under the chloroform-stimulus the pulse would reappear at the wrist and color return to the face. While these effects were temporary, it gave opportunity to apply other and more permanent medication.

In closing, let me say that:

1. In all cases of pregnancy the physician should make a thorough examination of the heart at the first visit.

2. If mitral stenosis is present, and is recognized before the fifth month, the only safe treatment is in producing abortion.

3. If the sixth month has passed, the patient must remain perfectly at rest. The secretions must be closely watched, the husband or nurse instructed in the use of chloroform, and the patient must be under the constant care of a physician.

CLINICAL MEMORANDA.

OBSTRUCTION OF THE BOWEL FROM MECKEL'S DIVERTICULUM—A CHOLECYSTOTOMY.

BY J. A. PRINCE, M.D.,
OF SPRINGFIELD, ILL.

ON the 17th of last March, Bertha P., aged four years and three months, while putting on her clothes, was suddenly seized with acute lancinating pains, referred to the umbilicus. For three days previously she had complained of occasional pain in this region. Obstruction of the bowels soon became manifest, and was complete. On March 23d, I was called by the attending physicians, Drs. Mudd, of Athens, and Williamson, of Cantrall, to operate. Drs. S. M. Stocker, of Duluth, Minn., and N. S. Penick, of this city, accompanied me.

Her physicians stated that every means known had been employed to produce an action of the bowels, but without success. Opiates had been freely administered to control pain, which had been constant and excessive. During the three days preceding my visit, stercoraceous vomiting had been present. The temperature had ranged from normal to 100.5°, and the pulse from 108 to 137. The abdomen was tympanitic and tense, though not greatly distended.

One inch to the left of the umbilicus was an indurated area about two inches in its vertical diameter, by an inch and a half in its transverse diameter. Pressure over this area caused pain. A diagnosis of intussusception was made, and operation was advised. I explained to the parents and friends the dangers of the operation, and the almost certain prospect of a fatal termination without surgical interference. The proposal was accepted, and I proceeded without delay. An incision was made in the median line, and upon opening the peritoneum a large amount of thin fecal fluid gushed out. The abdominal cavity was carefully cleansed by flushing with hot sterilized water. The point of obstruction at once came into view, and was found to be due to an encircling band, the tension of which was so great that it had accomplished an almost complete resection of the incarcerated loop, the distal end being entirely cut through, and the proximal end nearly so.

The resection of the loop was completed, the ends freshened, and an end-to-end approximation made; the abdomen was flushed, drained, and the wound closed. The operation occupied one hour. Death occurred two hours later, from shock.

As the condition of the patient was very bad during the operation, and we were compelled to work by the feeble light of a kerosene lamp, all haste possible was made, and the seat of the obstruction was not noted, nor was the character of the band ascertained until the specimen was examined at leisure.

The resected loop measured four inches, and was from the lower portion of the ileum, though its exact distance from the cecum was not noted. From the side of the gut-wall projected a diverticulum of globular shape, one-quarter of an inch in diameter at its junction with the intestine; five-eighths of an inch in its greatest diameter, and one and a half inches long, ending in an elongated cord or band, which was impervious. The length of this band can only be estimated at about an inch, as it was broken in liberating the intestine, leaving one-half of an inch of its length attached to the diverticulum. This elongation was attached to the mesentery below the origin of the diverticulum, forming the incarcerating ring.

Meckel's diverticulum is rarely found to have this form, it being usually of a conical shape with its greatest diameter at its origin. Indeed, Treves says: "In no case, so far as I am aware, has it been seen to assume a polypoid form and present a comparatively narrow attachment." The cut shows well the diverticulum and its attachment.

The literature of this subject is very meager, the best descriptions that I have been able to find being in *Heath's Dictionary of Practical Surgery*, and Treves's little book on *Intestinal Obstruction*. *Quain's Anatomy* merely mentions the fact that a pouch or diverticulum may sometimes exist at a point in the lower ileum. To Treves I am indebted for the following description and facts:

Meckel's diverticulum is due to the persistence of the vitelline duct. When met with in its most perfect condi-

tion it exists as a tube, having a structure similar to that of the small intestine itself, that extends between the lower part of the ileum and the umbilicus. The length of this tube is, on an average, three inches. Sometimes it exists only as a nipple-like projection. On the other hand, cases are recorded in which the diverticulum, in the form of a free tube, attained the length of ten inches. The diverticulum is always single, and arises from the ileum, from one to three feet above the ileo-cecal valve.

In the majority of cases the end of the diverticulum is free. Very often, however, it is continued in the form of a solid cord. This diverticular ligament may break from its attachment to the parietes, and may float free within the abdominal cavity. Under such circumstances, however, it is much more usual for it to acquire fresh adhesions to some point of the peritoneal surface. These secondary adhesions of a free diverticulum, or of a diverticular cord at the extremity of one of the processes, are of considerable importance in the etiology of strangulation of the intestine. This secondary attachment is most often to the mesentery.

In twenty-three cases collected by Cazin, and nineteen by Treves, the attachments were as follows:

Near the umbilicus	10
" inguinal ring	1
" femoral ring	1
To the small gut	9
" cecum	3
" colon	1
" mesentery	17

CHOLECYSTOTOMY.

Mrs. D., aged thirty-nine years, was sent to me through the courtesy of Dr. Hobbs, of Mound Station, Ill. During the last four years the patient has suffered intensely from repeated attacks of biliary colic. Her physician found calculi in the stools after several of the attacks. When first seen by me, June 2, 1892, she was intensely jaundiced and greatly emaciated from much suffering. The attacks of colic were occurring as often as every week, and accompanied by a severe rigor, followed by high temperature, reaching 102° and 103°; the jaundice had of late been constant. I was unable to find calculi in the stools following attacks, after careful examinations repeated several times. As she was rapidly losing ground, and was in every way miserable, she readily consented to an operation, which was performed July 3d.

An incision four inches in length was made parallel to the lower margin of the liver, and over the gall-bladder, which could be indistinctly palpated; dense adhesions were encountered between the gall-bladder and the neighboring intestines, which were separated. The organ was much distended and contained calculi. It was sutured to the margin of the wound, and five days later was opened. Quite a quantity of clear, viscid fluid escaped, and about twenty-four calculi were removed. An attempt at this time to pass a probe into the duct failed; the orifice of the duct seemed to be completely closed. No bile whatever escaped from the bladder; during the healing process there was only the same clear fluid found on first opening the viscus. The discharge of this character, however, was quite profuse.

In four weeks she left the sanitarium, and two weeks later the fistula had completely closed. For ten weeks following the operation she improved rapidly in health; she was free from pain, and the jaundice entirely disappeared. Then the old attacks returned, seemingly with even greater severity; she returned to me September 23d. Her jaundice had returned and her general health was much worse.

Recognizing that there must exist an obstruction below the gall-bladder, a second operation was advised, and carried out September 26th. One calculus was found in the gall-bladder, which, as before, contained only clear fluid. Upon careful examination a rounded body, as large as a good-sized marble, was found deep down under the surface of the liver; this was movable to a very limited degree. Crushing was attempted, first with the fingers and then with instruments, but for fear of doing damage to the tissues the attempt was abandoned. The duct was finally incised and the large calculus extracted with forceps. The wound in the duct was closed as securely as possible with a continuous fine silk suture. As the gall-bladder was somewhat mutilated, and evidently useless, it was excised, and the wound packed with iodoform-gauze. On the second day after the operation bile began to drain up through the gauze packing, and though the dressings were frequently changed, the clothing and bedding were often saturated. The wound healed rapidly, and at the end of four weeks had entirely closed, and she returned home. At this time (December 15th) she has remained free from any return of her trouble.

The calculus in this case must have been located in the cystic duct, completely closing it, and encroaching on the common duct to such an extent as to almost completely close it. During the first operation it was probably drawn back somewhat from the common duct by the manipulation upon the gall-bladder, allowing the free flow of bile. The weight of the calculus was thirty-eight grains.

JAMBUL IN THE TREATMENT OF DIABETES MELLITUS.

BY V. E. LAWRENCE, M.D.,
OF HALSTEAD, KANSAS.

IN July, 1891, Mrs. L., widow, aged about sixty, presented herself, relating that for several months she had gradually been declining in weight and strength. Her tongue was moist and covered with a white coat; the saliva was frothy and slightly viscid. The skin, as she herself remarked, was dry and rough, and she complained of almost constant itching, especially marked in the vulvar region. The appetite was fair, but the digestion poor. She was fond of sweets. There was slight swelling about the ankles. Inquiry elicited the fact that about sixteen pints of urine were passed in twenty-four hours. About an equal quantity of water was drunk. An an examination of the urine disclosed the presence of abundance of sugar. The specific gravity was about 1035.

The diagnosis being clear, the question of treatment presented itself. I explained to the patient the nature of her disorder, and wrote out for her the usual bill of fare used by diabetics, strictly prohibiting all articles of food likely to be deleterious. As to medicines, the

usual remedies were employed. Directions as to diet and treatment were faithfully followed. The patient improved somewhat. The amount of urine passed was smaller and the thirst was less annoying, but considerable inconvenience was experienced in regard to the restricted diet. While the urine was diminished in quantity, the specific gravity remained unchanged or rose, and the percentage of sugar remained unchanged. This treatment was followed for several months, when I became convinced that my patient would probably not receive any material benefit from the usual remedies and that the final issue of her trouble would be death.

I now determined to use jambul. All other medicine was discontinued, and the use of the jambul was commenced in about eight-drop doses of the fluid extract. The patient was directed to still persist in the avoidance of all articles of diet containing starch or sugar.

As the patient lived some miles in the country I did not see her again for about two weeks, when she returned to my office saying that she was much improved; that the quantity of water passed was much smaller; and that nearly all of the unpleasant symptoms had either disappeared or so diminished that she felt comparatively comfortable. She had become more fleshy, but desired very much to return to her usual articles of diet.

As a number of cases had been reported in which patients, even in the advanced stage of the disease, had been cured when little attention was given to the food eaten, I concluded to allow her to choose her own articles of diet. With this change, the treatment was continued. After two weeks she again returned, with the report that she still grew better and that the change of diet did not seem to be injurious, and that she ate starches as she wished, but was somewhat careful as to sugar.

An examination of the urine disclosed the presence of but a trace of sugar; and, later, even this disappeared. The patient continued the jambul for some weeks longer and then did not return. Since then I have seen her several times. She reports herself well and no longer has any symptoms of diabetes.

MEDICAL PROGRESS.

The Parasitism of Carcinoma.—METSCHNIKOFF (*British Medical Journal*, No. 1667, p. 1273) adduces evidence and presents argument in support of the close analogy between the coccidiosis of rabbits and carcinoma in man. He points out that in the livers of rabbits there are often present grayish or white nodules, with puriform contents, in which are found oval bodies known as coccidia—low forms of animal organisms. In young rabbits the presence of these lesions engenders a disease that often proves fatal, while full-grown rabbits tolerate the parasitism without suffering great harm. This disease, though infectious and parasitic, is never transmitted by true contagion. The nodules in the liver are formed by abundant vegetations of the biliary ducts, and are true tumors. The coccidiosis of rabbits is a miasmatic affection. In order to produce the disease in other rabbits the coccidia must undergo a certain transformation and segmentation. That coccidian infection occurs in man is demonstrated by the discovery of the parasite of malaria. Like the coccidiosis of rabbits and like malaria, carcinoma presents miasmatic characters. It was the presence of epithelial proliferation in both the coccidiosis of rabbits and carcinoma in man that suggested the parasitism of carcinoma. Numerous observers have found in various forms of carcinoma cellular bodies presenting none of the appearances of degeneration of protoplasm or of nuclei. Careful examination disclosed a close resemblance between these bodies and the coccidia of the rabbit. The absence of contagious characters from coccidiosis and carcinoma may be ascribed to their miasmatic properties, the spores of the parasite being formed outside of the organism.

PLIMMER (*British Medical Journal*, No. 1667, p. 1277) reports the examination of specimens from thirteen cases of recent carcinoma, prepared specially, and also fifty-three specimens from thirty-seven cases of various forms of carcinoma, prepared in the ordinary way, and the finding of the specific parasite in all. The organisms were most abundant near the growing edge of the neoplasm and in the glands that had become secondarily affected; they were present in small numbers or not at all in parts of the growth that were undergoing degeneration; they were also wanting in the fibrous portions of the growth and in cells undergoing karyokinesis. The bodies were nearly quite round and possessed nuclei and capsules. There was evidence of the ameboid nature of the organism. The organisms were best demonstrated by first placing small pieces of perfectly fresh tissue for twenty-four hours in a solution made just before using, and containing equal parts of a 5 per cent. solution of potassium bichromate, and a saturated solution of mercuric chloride in a 0.75 per cent. salt solution; then washing in running water for twenty-four hours, and then successively placing them in 30 per cent. alcohol for twenty-four hours; in 60 per cent. alcohol for twenty-four hours; in 90 per cent. alcohol for twenty-four hours; when they were thrown into absolute alcohol until they were hardened. They were then imbedded in paraffin, cut and stained on the slide with the Ehrlich-Biondi triple stain, washed out with alcohol, cleared with xylol, and mounted in xylol-balsam.

Two Pubeotomies.—TÖRNGREN (*Centralbl. f. Gynäkologie*, No. 49, 1892, p. 953) has reported the case of a woman, forty years old, pregnant for the ninth time, and having a generally contracted pelvis, in which pubeotomy was performed. The first four children had been born spontaneously; the second child was born dead; the fourth weighed 6¼ pounds. In the fifth labor version was performed, but the child was born dead, weighing 8 pounds. In the sixth labor, also, version was performed; there was some difficulty in delivering the head; the forceps was applied and withdrawn; the child weighed 7¾ pounds, and lived. The seventh child was born spontaneously, and weighed 6¾ pounds. In the eighth labor, version was performed, but the child died. The maternal measurements were as follows: Between the iliac spines, 8.27 inches; between the iliac crests, 10.39; between the trochanters, 10.97; Baudelocque's diameter, 6.73; diagonal conjugate, 3.92; true conjugate, 3.15. The vertex presented; the lesser fontanel to the right; the

sagittal suture in the transverse diameter. Pubeotomy was performed, and the child was safely delivered by means of axis-traction forceps. The fetal diameters were as follows: B. P., 3.65 inches; B. T., 3.08; O. F., 4.23; O. M., 5; S. B., 40.4. The child was 20 inches long, and weighed 6¼ pounds. The mother died twenty-two hours after the operation, in collapse. The post-mortem examination disclosed the existence of fatty heart, with hypertrophy of the right side; pulmonary emphysema; bronchitis; chronic nephritis. The second case occurred in a woman, thirty-six years old, pregnant for the second time, basiotripsy having been required in the first labor on account of a generally contracted pelvis. The pelvic measurements were as follows: Between the iliac spines, 8.85 inches; between the iliac crests, 10.39; between the trochanters, 11.55; Baudelocque's diameter, 6.16; diagonal conjugate, 3.65; true conjugate, 2.96. The vertex presented; the lesser fontanel to the left; the sagittal suture in the transverse diameter. The child was safely delivered by means of axis-traction forceps. The fetal diameters were as follows: B. P., 3.65 inches; B. T., 3.08; O. F., 4.62; O. M., 5; S. B., 4.23. The child was 20½ inches long, and weighed 7½ pounds. The woman got up on the twenty-first day.

Intubation.—BALL (*Lancet*, No. 3613, p. 1216) has reported twenty-two cases of intubation in children of from thirteen months to eight years old, with ten recoveries. The operation was performed in every case for the relief of symptoms of laryngeal obstruction, which threatened the life of the child, and as the alternative of tracheotomy. In one case the obstruction was a result of the swallowing of hot tea; in another, of swallowing carbolic acid. The others were cases of laryngitis, simple or membranous (diphtheritic); it was not always possible to determine which. In five cases the condition was secondary to measles; four of these died. In seven cases tracheotomy was performed after intubation had been tried, principally because the tube seemed to be obstructed by membrane or secretions; in all of these, death took place. In all the cases in which recovery took place the tube was left in the larynx for periods varying from three to thirteen days, the average period for the ten cases being eight days. In four cases the thread was permitted to remain *in situ*; in one of these the child removed the tube by means of the thread. In the remaining cases the thread was removed immediately after the introduction of the tube. In each of two of the fatal cases an ulcer was found on the anterior wall of the trachea, at a point corresponding with the lower extremity of the tube. The tubes, however, were not of exactly the same design as the O'Dwyer tubes. In one case death took place during the operation.

THERAPEUTIC NOTES.

Enormous Doses of Paraldehyde in a Case of Acute Mania.—At a recent meeting of the New York Neurological Society, DR. WILLIAM D. GRANGER reported the case of an unmarried woman, twenty years old, in a second attack of acute mania that had existed for six months. The previous attack had occurred five years before, and was fully recovered from. There was a history of insanity in her father's family, and her mother was a "nervous" woman. The attack was of great violence, and attended with pronounced delusions and hallucinations. There was marked insomnia from the first. During her previous illness she was given large doses of paraldehyde, and with the advent of the first symptoms of the second attack, the same drug was administered. She was given each night ten fluiddrams of paraldehyde, in divided doses, and this method of treatment had been kept up for nearly four months. It produced but little sleep, and that was broken. When the patient came under Dr. Granger's care, he found that in spite of her close confinement and the enormous doses of paraldehyde that she was taking, she was showing some evidence of convalescence. She was well nourished and had a good appetite. There was no gastro-intestinal trouble. She had no cutaneous eruption. A careful examination failed to reveal any unfavorable symptoms connected with the use of the drug, unless it was that it had lost some of its hypnotic power. After the third night, and against the wishes of the family, Dr. Granger determined to rapidly withdraw the drug, and he did so in ten days. After its withdrawal the patient was able to sleep soundly all night. No other drug was substituted. She suffered no inconvenience during the period of its withdrawal. In three months the patient was discharged, and she became perfectly well. No symptoms of the paraldehyde "habit" appeared.

The Treatment of Cholera with Anticholerin.—At a meeting of the Society of Physicians of Budapest, ANGYAN (*Prager medicin. Wochenschr.*, 1892, No. 49, p. 606) reported the results of the employment of anticholerin in nineteen cases of cholera of unusually severe type. Nine of the cases died—a mortality of 52 per cent. It was found that the remedy exerted a most beneficial influence upon the course of the disease. In some cases slight transient febrile reaction appeared. Most of the symptoms soon changed for the better, diarrhea and vomiting ceasing on the first or, latest, on the second day. Cyanosis, which would sometimes yield to hypodermatoclysis, frequently, however, to recur, disappeared permanently after the employment of anticholerin. The secretion of urine was resumed under the influence of the treatment, and soon attained respectable proportions; while in algid cases not treated with anticholerin the anuria would persist for three or four days. Although the number of cases was too small to lead to a final conclusion, the general impression was a favorable one.

An Antiseptic Adhesive Application.—

℞.—Zinci oxidi . . . . gr. v.
Zinci chloridi . . . . gr. xxiv.
Gelatin. . . . . ʒv.
Aquæ destillat. . . . . f ʒj.—M.
S.—Apply topically.

L'Union Méd., No. 136.

Barium Chlorid for Epilepsy.—LISLE (*N. Y. Medical Journal*, lvi, 24, p. 654) reports the employment, with favorable results, of barium chlorid in doses of from gr. ⅛ to gr. ½, given every four hours, in the treatment of epilepsy.

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SATURDAY, JANUARY 14, 1893.

THE MECHANISM OF ANESTHESIA.

IT is, no doubt, a matter of considerable interest, if not importance, to determine in what manner anesthesia takes place—in short, to demonstrate the mechanism of it, or if we cannot go so deeply, to have some theory, which, if it does not explain all the facts, at least serves to point out the way toward something better.

To demonstrate the mechanism of anesthesia—to show both the causation and progression of the phenomena, and their dependence upon one another, in obedience to definite laws—is an august problem. Many have attempted to solve it, and in many ways. Some, relying on their great experience and practical knowledge, gained by extensive observation of the effects of anesthetics in surgical cases, construct a theory with these data alone. Others again, not neglecting these data, make them supplementary to a process of reasoning on the more pregnant facts of experimental physiology. To speculations of the latter kind we desire to direct the reader's attention, though we must observe that, much as these speculations are to be prized as real advances, they appear to us to fall short of the truth by ignoring a third series of facts—namely, the facts of psychology.

To CLAUDE BERNARD,[1] perhaps, more than to any other, we owe our present knowledge on this curious subject. It was he that first developed, in a series of incomparable experiments, the surprising range of the anesthetic powers of ether and chloroform. Not alone animals, but also plants, the germinating ovule, the simplest of all organisms, the protozoa—in short, any organic body with protoplasm for its basis, may be anesthetized.

Protoplasm itself may be anesthetized, and on this depends the all but universal anesthetic power of ether and chloroform; for protoplasm is the basis of all life—is the fundamental living element of all tissues. On protoplasm ether and chloroform act by suspending vital activity, or, to speak differently, by suspending the power of reacting to stimuli. This is anesthesia in its simplest form. It is the first stage in the action of these anesthetics on protoplasm—a point of some importance, for there is in this case, as in more highly organized bodies, a second and deeper stage in which the vital activity, the power to react to stimuli, is destroyed without possibility of renewal.

The nature of anesthesia in man is not much different. In man, as in simpler organisms, it is the protoplasm that is attacked. We extract from BERNARD a passage bearing on this point: "If we reduce a man to insensibility—for example, by means of ether or chloroform—we find that the anesthetic, on being breathed, is absorbed by the lungs and circulates in the blood. It is first upon the delicate protoplasm of the nervous centers that the anesthetic exerts its influence, whence, indeed, it happens that the phenomena of consciousness and perception by the senses are the first to disappear, although the protoplasm of the nerves, the muscles, the glands, and other anatomic elements is not affected. This explains why, during anesthesia, the functions of life are able to continue, and this also explains why anesthesia in this stage is not perilous to life; for if, at the same time, we should reduce the protoplasm of all of the anatomic elements to a state of anesthesia, the functions would simultaneously cease their activity and death would be instantaneous."[1]

How, then, may we describe the changes that occur in protoplasm during anesthesia? How is the irritability of tissues or of the elements of tissues suspended by an anesthetic? Possibly, because some chemical or molecular change is induced (BÖTTGER). This, as PROF. SCHMIEDEBERG remarks, is no explana-

[1] See his book entitled Phénomènes de la Vie, vol. i, p. 251.

[1] Op. cit., p. 254.

tion at all. A better and more definite explanation is one that appears to be gaining ground and has had the support of BERNARD, BINZ, and POHL, that these changes, chemical or molecular, are a phenomenon of coagulation.

To such a theory the recent researches of POHL lend some support. From them it appears that chloroform—which he selects for experiment—is never present in the blood in a quantity greater than 0.01 per cent., and that on the average the quantity is not greater than 0.035 per cent.—a fact that serves to explain why the vital activity of the protoplasm of the nervous centers is suspended (a suspension that we have seen really takes place in simpler protoplasm and constitutes true anesthesia), but not destroyed. It is further worthy of remark, that in cases of death from chloroform, POHL found always a higher percentage in the blood than at other times. Are there, however, any facts to show that chloroform does exert its influence upon the nerve-centers first, and on them more powerfully than on other portions of the body? It may be answered, Yes, with some slight qualification that is not material.

POHL found that in the blood chloroform was taken up chiefly by the lecithin and cholesterin, for which it manifests a strong affinity; that it accumulated in those parts of the body that are rich in these substances—in the brain more especially; that the serum held very little, an exceedingly small amount indeed. It is this tendency of chloroform to enter rapidly into combination with lecithin and cholesterin, and therefore to make its way rapidly to the brain—the organ richest in these constituents, that supports the views already mentioned. But it is, perhaps, unfortunate for a theory that professes to explain anesthesia by supposing some specific action of chloroform on the nerve-centers, and particularly the ganglion-cells, that these are not richer than many others, as, for example, liver-cells, in those substances that have an affinity for chloroform.

We cannot, POHL says, with propriety speak of anesthesia of liver-cells. That this is, nevertheless, not an objection of very great weight is manifest if it be recalled that it is not the function of the cell, or any accidental properties belonging to the cell, that render it capable of anesthesia, but its having protoplasm for a basis. We cannot, to be sure, abolish the faculties of perception and sensation of a liver-cell, but these faculties are not essential to anesthesia, except in so far as they are inherent in protoplasm; for anesthesia is finally that state of protoplasm in which its vital power—its power to react to stimuli—is suspended, but not destroyed.

We have said that the present speculations fall short of the truth because they ignore or treat but very partially the facts of psychology. Has it never occurred to the advocates of the theory just described to consider the phenomena from the psychologic point of view as well? Have they never reflected on the number and nature of those changes that take place when consciousness is lost? Is but one part of the brain concerned when there is successively loss of perception, loss of sensation, loss of the power of forming judgments, loss of will, and finally complete loss of intelligence, or is there something more concerned? The matter, we are sure, requires careful analysis, and we trust someone will come forward who is capable of it.

Besides, it may be urged against this partial view of the nature of anesthesia, that some anesthetics act differently than do others; and though it may be true of chloroform that in the course of its action on man consciousness and perception by the senses are affected first, it is not true of another anesthetic, ethyl bromid. We extract from VON ZIEMACKI'S paper on ethyl bromid a valuable passage that makes this clear—a passage that shows so well, besides, that anesthesia, as it ought to be conceived, is something more than local or general insensibility to pain.

After describing the preliminary effects of ethyl bromid, redness and tingling of the skin, etc., VON ZIEMACKI continues: "In this stage (the second) sensation was practically abolished, but *intelligence was unimpaired.* I heard and understood perfectly the conversation of my colleagues about me; and I recollect with great vividness that the feeling of taste was unaffected, though at the same time I felt no longer the pain of a puncture of the nose. Sensibility to pain, in fact, was from this time completely suspended. I understood easily that the puncture of the nose must be painful, yet I felt only the *sense of contact, not the pain*, which is a very striking fact. Next, there was darkness before the eyes. . . . Unconsciousness, I maintain, surpervened very rapidly."

From this, it is clear that sensation was lost before perception, and perception before consciousness. Last came unconsciousness. In the stage before that, in the intermediate stage between the loss of perception and the loss of consciousness, there was

no true anesthesia, for the mind was still free, and hence a puncture was felt, but not the pain accompanying it.

With these facts before us, it appears to us inconceivable that the theory of "specific action on the ganglion-cells" is a sound explanation of anesthesia; for that is a theory that seems to demand something invariable in the order of the phenomena, some function, besides, which has no ground for existing in the ganglion-cells themselves.

A TRUE PHYSICIAN.

THE advice as to the prophylaxis of venereal disease that individuals calling themselves physicians have dared to give, and that journals assuming to represent the therapeutic status of the day have dared to publish, has on previous occasions been discussed in these columns. It is with a deep feeling of gratitude to the manly author that we now quote advice upon the same subject—but far different in spirit—from the reprint just issued of GOWERS'S Lettsomian Lectures of 1890, "On Syphilis and the Nervous System."

"One means alone remains, old as the malady itself, by which it can be prevented. One method, and one alone is possible, is sure, and that one is open to all. It is the certain prevention secured by unbroken chastity. . . . Do we do all we can—and our profession gives us power that no other has—do we do all we can to promote that perfect chastity which alone can save from this and from that which is worse? The opinions that on pseudo-physiological grounds suggest or permit unchastity are absolutely false. . . . They rest only on sensory illusions, one of the many illustrations of a maxim I have often to impress on various sufferers, 'There are no liars like our own sensations.' Rather, I should say, they rest on misinterpretations of these, always biased and often deliberate. With all the force that any knowledge I possess and any authority I have can give, I assert that no man ever yet was in the slightest degree or way the worse for continence or the better for incontinence. From the latter all are worse morally, a clear majority are worse physically, and to no small number the result is and ever will be utter physical shipwreck. . . . Let us then, with our power for good or evil, beware lest we ever give even a silent sanction to that against which, I am sure, on even the lowest grounds that we can take, we should resolutely set our face and raise our voice."

These are the words of the true physician, and again let us express our thankfulness that even in this age of demoralizing competition for wealth, popularity, and the influence that may be gained by "saying of evil 'it is good,' and of good 'it is evil,'" one teacher at least has the wisdom to see the truth and the courage to speak it.

SOCIETY PROCEEDINGS.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, December 28, 1892.

DR. J. M. BALDY read a paper entitled "Gynecological Technique as Carried Out at the Gynecean Hospital."

He stated that the watchwords from the beginning to the end of an operation are *thoroughness* and *simplicity*.

The preparation of the patient should begin, when possible, at least twenty-four hours before the operation. The first steps are to regulate the diet and empty the gastro-intestinal tract. Free purgation is begun at once, preferably by the use of magnesium sulfate, a dram dissolved in water, every hour until the bowels begin to move. Usually five or six doses are sufficient to accomplish the object. The purgative should be so administered that the action of the bowels ceases five or six hours before the time set for the operation. After beginning the administration of the purgative, the diet should be light and concentrated. If the operation is to be performed in the afternoon, the patient's supper on the day before consists of the ordinary house-diet. From this time on nothing passes her lips, unless it be a glass of milk or a cup of bouillon at breakfast-time. Even water, except in small quantities, is withheld. These steps in the preparation can be carried out in the case of most patients, but in dealing with an unusually weak woman, considerable judgment must be used.

A hot bath is given on both the day before and the morning of the operation. If the patient is unable to be moved to the bathtub, the patient is bathed in bed. Prior to the final bath an enema of soapsuds and water and a vaginal douche of mercuric chlorid (1 to 3000) are given. Immediately on coming from the bath a fresh night-gown is put upon the patient and she is placed in a bed specially prepared for her reception. After returning to bed the abdomen—the seat of the operation—is specially prepared. A nail-brush, soap and hot water are used freely and vigorously, special attention being paid to the umbilicus and the pubic hairs. In exceptional cases the pubes is shaved. The abdomen is then bathed with alcohol and turpentine and is finally protected until the time of the operation with a towel wrung out of mercurial solution.

When the patient is placed on the operating-table the abdomen is well rubbed with ether and bathed with alcohol by the operator as the final preparation, especial attention being paid to the pubic hairs and the umbilicus. The legs are wrapped in a blanket, which extends from the feet to the pubes; a second blanket is placed over the chest. All blankets, clothing, table, etc., about the patient, from her chest to her feet, are now covered with towels prepared for the purpose, the abdomen being left bare from the epigastrium to the pubes. Over all this is placed a piece of mercurial gauze, with a slit in it at the point selected for the incision.

All tables used in the operating-room, with the exception of the Krug frame for Trendelenburg's position (which is of galvanized iron), are made of wood, perfectly plain, and shellacked. The reason for this is twofold—first, because it is desirable in the preparation of the room that it should be emptied; this is rendered

possible in the case of everything except the gas-fixture and the sink. Secondly, as there is an operating-room on each floor, it becomes necessary to frequently move the tables from one room to the other. When the rooms are not in use, the windows are always open. The walls of the room from floor to ceiling are of white tile; the window trimmings are of white marble; the floors are of asphalt; the ceilings are plastered and heavily painted. In the preparation, the room is first stripped of all of its furniture. The walls, ceiling, and floor are washed by means of a hose, and then mopped with a cloth dipped in mercurial solution. As each article is brought into the room it is scrubbed with soap and water, rinsed off, mopped with mercurial solution, and placed in its proper position; the tables and benches are covered with sheets or towels specially prepared for this purpose. All linen used in the operating-room has been separately laundered. Distilled water is used throughout the operation.

After an operation the instruments are thoroughly scrubbed with soap and water, and are then passed through scalding water before being returned to the case. Prior to the operation they are boiled for twenty minutes in a weak solution of sodium bicarbonate. As few instruments as possible are used. In an ordinary operation, two needles, two ligature-staffs, four hemostatic forceps, a knife, a needle-holder, and a pair of scissors are amply sufficient. These are taken, together with the tray on which they are placed for boiling, directly from the sterilizer, and put upon the table as the patient is brought into the room. In this way they are not handled from the time at which they are taken out of the sterilizer until they are to be used.

Three varieties of ligatures are employed: silk, silkworm-gut, and catgut. A half-hour before the operation the silk is immersed in a solution of mercuric chloride (1 to 100); prior to being used it is washed in boiling water. The silkworm-gut is boiled with the instruments. The catgut is prepared by being immersed in ether for forty-eight hours, soaked for the same length of time in a 1 to 100 alcoholic solution of mercuric chlorid, after which it is put in a solution of two parts of oil of juniper and one part of alcohol. It is taken directly from the latter solution for use at the operation.

All sutures and ligatures used within the abdominal cavity are of silk (Chinese twist). Silkworm-gut is invariably used for closing the abdominal wound. Catgut is used principally in vaginal hysterectomy and plastic work.

New sponges are prepared by being thoroughly beaten, soaked for twenty-four hours in a weak solution (3 per cent.) of hydrochloric acid, after which they are soaked for twenty-four hours in a strong solution of sodium bicarbonate, and are finally placed in alcohol. Immediately after being used in an operation they are thoroughly washed in cold water, placed in a strong (practically saturated) solution of sodium bicarbonate for twenty-four hours, at the end of which time they are removed, washed under the cold-water spigot until all of the sodium salt is washed away, and are then immersed in a solution of sulphurous acid for twenty-four hours. They are taken directly from the acid solution, washed, and placed in commercial alcohol until used. Four sponges only are used at each operation.

The dressing of the abdominal wound consists in placing several strips of dry mercurial gauze over the incision and a cotton pad covered with gauze over this, the whole being held in place by a six-tailed bandage. Dressings are not disturbed for eight days. No iodoform or other powder is used. Stitch-hole abscesses are exceptional.

After being used, the glass drainage-tubes are soaked in a strong solution of sodium bicarbonate for twenty-four hours, rinsed under the spigot, washed with turpentine and ether, and then boiled for twenty minutes, after which they are kept in commercial alcohol.

Rubber drainage-tube, whenever used, is soaked in mercurial solution, and washed in boiling water.

After an operation the drainage-tube is cleaned by the nurse every fifteen minutes or half-hour, as occasion requires. As the fluid discharged from the tube lessens in quantity, the intervals between cleaning are lengthened. Whenever the tube is cleaned the nurse's hands are carefully prepared with soap and water and mercurial solution.

At and after each cleaning the syringe used to withdraw the tube-contents is cleansed inside and out with hot water and mercurial solution, as are also the mouth of the tube and the rubber protecting it. Fresh mercurial cotton is placed over the entrance of the tube at each cleaning. The tube is removed as soon as the contents become clear and small in quantity. The edges of the opening left by the tube are drawn together by a strip of adhesive plaster, and the dressings replaced by fresh ones.

Everybody that takes part in an operation, and is liable during its performance to handle any of the instruments or materials, is required to go through the same preparation. All assistance is rendered by three nurses; the chief nurse assisting the operator directly, a second nurse attending to the sponges, and a third nurse changing the waters. The preparation of operator and nurses is as follows: a hot soap bath is taken, and clean linen clothing direct from the laundry is donned. The hands and arms are prepared by first carefully cleansing the nails with a penknife, followed by a free use of hot water, soap, and nail-brush for twenty minutes, and rinsing in fresh water. They are then bathed in commercial alcohol, and are finally soaked in a mercurial solution (1 to 2000) for five minutes. The greatest danger-point of infection is, of course, under the nails, and time used in a most careful hand toilet is never misspent —is, in fact, absolutely essential to success.

There is not an article in the operating-room that cannot be duplicated or easily substituted in almost any well-ordered household. Soap, water, nail-brush, and tablets of mercuric chlorid are easily obtained, and with a little time and trouble the poorest hovel can be turned into a good and safe operating-room. Of course, this means hard work for both nurse and surgeon, but what nurse or surgeon who has once experienced the horrors of a death from septic peritonitis would not feel that the work before the operation was as nothing in comparison with the results that follow.

The number of instruments, sponges, etc., may seem to many to be entirely inadequate for the purpose, but in many hundreds of operations they have been found amply sufficient; it is exceptional that recourse to the instrument-case has been necessary. The fewer articles

used the fewer sources of possible infection and accident. A large number of instruments lying about constitutes, in addition, a source of endless confusion and annoyance, and requires an extra assistant.

CORRESPONDENCE.

CHLOROFORM AND THE HEART.

To the Editor of THE MEDICAL NEWS,

SIR: In your issue of October 29, 1892, this passage occurs: "We have noted as instances of that frame of mind which is unsuitable for fair judgment such statements as Surgeon-Major Lawrie's, that 'the most important result of the labors of the Hyderabad Commission has undoubtedly been to establish the proof that chloroform has never under any circumstances whatever a direct action upon the human heart.'"

1. The expériments of the Hyderabad Commission have been confirmed by cross-circulation experiments, performed in Hyderabad during the last three months. They prove that chloroform has no direct action on the heart, and that the fall of blood-pressure, which is the normal condition of anesthesia with chloroform, is due to its action on the vasomotor center in the medulla oblongata. Narcosis of the vasomotor center causes dilatation of the small arteries, by which the fall of blood-pressure is brought about, and is one of the earliest, if not the very earliest, of the effects of chloroform. The passage of the blood from the arterial to the venous system is thus greatly facilitated, so that the work of the heart is lessened. Not only, therefore, has chloroform no direct action on the heart, but the heart is safeguarded from the commencement to the end of the administration, whether the anesthetic is given in medicinal or in poisonous doses. Moreover, unless the nutrition of the heart is interfered with by interference with the breathing, as, for example, by choking or by overdosing, the heart may safely be left to look after itself. The heart is, literally and in truth, the chloroformist's sheet-anchor, and his very best friend.

2. There is no such thing as a safe *method* of chloroform administration, and overdosing may take place in a variety of ways, whether the drug is given on lint or on a towel, or on a cap such as we use, or with Junker's or Skinner's, or any other form of inhaler. The one and only point of vital importance in the administration of chloform is that, whatever method be employed, the breathing shall never be interfered with in any way throughout the inhalation. If this condition is fulfilled, it is impossible to produce anything with chloroform but anesthesia, and anesthesia alone is entirely free from risk.

3. I am at a loss to understand why you should regard a frame of mind that is the outcome of twenty-six years' clinical experience, in England and in India, which accords with the foregoing facts in every particular, as "unsuitable for fair judgment."

4. I venture to submit, most respectfully, that this frame of mind is infinitely more suitable for fair judgment than the frame of mind of the writer of your article. Any evidence, however trumpery, is accepted by certain writers if only it favors the view that chloroform affects the heart directly; and they unhesitatingly reject without examination all evidence which goes to prove that it never does so.

5. The following statistics may be of service to you: Up to the end of November of this year I have notes of every event which took place during more than two thousand chloroform administrations in the Afzulgunge Hospital. There were two cases of narcosis of the respiratory center due to accidental overdosing. In one case the patient was saved by "secondary chloroform syncope"—one form of that reflex stoppage of the heart, which, according to the Glasgow committee, constitutes the chief danger under chloroform; and in the other by artificial respiration.

Your most obedient servant,

EDWARD LAWRIE,
Surgeon, Lieut.-Colonel.

THE RESIDENCY, HYDERABAD, DECCAN,
December 8, 1892.

[We inserted the passage that has given Dr. Lawrie perhaps just offence, assuredly from no want of respect for him, but merely because, in order to make our paper complete as a piece of criticism, we needed to give eminent examples of a bias, plainly discernible in nearly all the writings we examined, toward one anesthetic or another. We selected, we say, eminent examples. It would be invidious and harsh in such a case to do otherwise. Dr. Lawrie's experience with chloroform has been unrivalled for consistent and successful carrying out of sound teaching, and we are not inclined to depreciate it, as he seems to suppose. It is this experience constantly making itself felt in matters above it that we objected to. In abstract reasoning on the results of experimental science it is constantly working for evil, by transforming those results, by distorting them and giving them a large asseverative character, to the exclusion and prejudice of other facts that might be reconciled with them. Hence, the sentence in question, purged of this disturbing element, contains the truth, and Dr. Lawrie would write it so: that the "most important result of the labors of the Hyderabad Commission has undoubtedly been to establish the proof that under these circumstances chloroform never has a direct action on the heart;" but into his mind comes the recollection of his great and successful experience, and he writes "human heart" and "never under any circumstances whatever."[1] Thus the sentence comes to contain a truth and the implicit denial of another truth—a truth demonstrated by Laborde and François Franck, that chloroform acts mechanically, as indeed other volatile substances do on the terminal filaments of the nasal branches of the fifth nerve, and arrests *simultaneously* the heart and respiration—a stoppage that is nearly always temporary, but sometimes fatal (*arrêt cardio-respiratoire primitif*).[2] If this is a real danger, then sentences like Dr. Lawrie's tend to obscure it.

We are sorry that we have not space for a minute reply to the following passage from a postscript: "I

[1] There are passages in Dr. Lawrie's articles and printed correspondence in which he has spoken more carefully, seeming to admit the possibility of an accident if Syme's principles are neglected. See, for example, the Lancet, vol. i, 1891, p. 591.

[2] Bulletin de l'Académie de Médecine, 3me série, tome xxiii, pp. 556, 591, 613, 709, tome xxv, p. 816; Gazette hebdomadaire de Méd. et de Chir., 1876, pp. 773, 775; Archives de Physiologie norm. et path., 1889, p. 548; also, Du Bois-Raymond, Berliner klin. Wochenschrift, 1891, No. 53.

have never met with any case fit for an operation which was not fit for chloroform. This is the expression of one man, and must be taken for what it is worth."

This refers to our remark that some cases were fit for chloroform, some for ether, some for gas, etc. This statement, we believe, is true, and we made it because we thought it a pity that anyone should be prevented from using chloroform who can use it properly; and more particularly because we thought that the first step toward a sound course of instruction in the matter of anesthetics for students was to let each anesthetic have free play to establish any just claims.—Editor The Medical News.]

LABOR DELAYED BY RIGIDITY OF THE OS UTERI.

To the Editor of The Medical News,

Sir: In a recent article, Dr. Edward P. Davis (The Medical News, December 10, 1892, p. 656) truly says: "There is no more trying complication of labor for patient and physician than persistent rigidity of the os uteri"—a statement with which I fully coincide. In a case recently under my observation no surgical aid was required; in fact, in an experience of twenty years of active practice I have never had occasion to incise the cervix, for the reason that I have always accomplished dilatation by means of the fingers and Barnes's dilators, or by the ballon-Champetier, which I prefer in some cases, as it produces more rapid contractions; and in cases of hemorrhage from detachment of the placenta, it acts as an excellent intra-uterine tampon.

Mrs. A. B., thirty-two years old, a primipara, of good general development, rather robust, with a normal pelvis, was taken in labor on the night of November 21, 1892. As I was occupied with another case at the time, Dr. E. F. Smith attended the woman for me. On making a vaginal examination he found the cervix rigid and undilatable, although the pains were severe and frequent. As in the course of an hour no progress or change had taken place, he ordered a dose of chloral hydrate, gr. xx, to be repeated at the end of an hour, if no sleep had been secured. The pains persisted during the night, and about 6 o'clock A.M. the characteristic bearing-down pains had set in. The cervix was still unyielding. The patient had not derived much benefit from the chloral, on account of the persistent and severe pains which had continued during the whole night. I saw the patient this day at about 1 P.M. I found the cervix still rigid, but by manipulation succeeded in introducing my index-finger into the uterine cavity, and found a vertex-presentation in the right occipito-posterior position. The membranes had already ruptured spontaneously, but no amniotic liquid could be detected. By this time the patient's strength was failing, and as the bearing-down pains were severe and frequent, and a reasonable time had elapsed since labor had begun, without progressive dilatation, it was decided to promote this end by manual procedures until Barnes's smallest dilator could be introduced. This, however, was soon pushed down into the vagina by the strong uterine contractions, but was replaced immediately by the next larger size until finally the largest size was introduced. Sufficient dilatation had now been produced to admit the introduction of the forceps, which were applied without difficulty and without the use of an anesthetic. Gentle traction was made with each pain, and after some hard pulling delivery was accomplished without any accident or injury to the mother. Unfortunately the child, a well-developed boy, died shortly after being born, in spite of all efforts at resuscitation. A dose of ergot was given to the mother, and as the placenta did not come away, after waiting twenty minutes I had recourse to Crédé's method.

I do not advise or recommend the making of multiple incisions into the cervix. My experience has taught me that by the use of the fingers, Barnes's dilators, or the ballon-Champetier, dilatation can be effected without exposing the patient to septic infection by the use of the knife. Dr. Davis well says: "It is distinctly a dangerous method of treatment."

Respectfully, J. J. Lamadrid, M.D.

Brooklyn, N. Y.

POSSIBLE ABUSES IN PRIVATE HOSPITALS.

To the Editor of The Medical News,

Sir: A patient was admitted on December 3d to the Gynecological Ward of the Philadelphia Hospital with the following history: J. D., aged twenty-three years, had been perfectly healthy and free from pain until five weeks ago, when she had a fall, followed by severe pains in the groins and back. She was examined by an abdominal surgeon, who urged an immediate operation, to which she consented, and for which she entered the surgeon's private hospital. She does not know what was done to her, but she was very ill after the operation and suffered greatly. At the end of four weeks, although she was in a wretched condition, she was told she must leave the hospital, as it was against the rules to keep anyone longer than that time. She went to some friends, but as she was perfectly helpless and they could not attend to her, she was sent to the Philadelphia Hospital on the next day but one.

On examination, a large fistula was seen in the lower part of a scar upon the abdomen, discharging flakes and pus. The temperature was high, the pulse very rapid and feeble. It was plain that the patient had not long to live. Her life was a little prolonged by good treatment and nursing, but she died on December 26th. Now, if the woman's story was true—and I see no reason to doubt it—she had been ill-treated. The inference is unavoidable that she was turned out of the hospital in which she had been operated upon to save trouble, expense, and the operator's statistics. It was perfectly evident that she must die, and it was known, she declared, that there was no one to care for her. Had this occurred in a public hospital the managers would have called the surgeon to sharp account, but when one individual is owner, manager, and operator, he is at present absolutely irresponsible, and the temptation to do his patients wrong from interested motives may be strong. Would it not be a wise regulation that private hospitals should be licensed and regularly inspected by the authorities? On well-grounded complaint the license could be revoked. And would not a proposition to this effect come more gracefully from the profession itself?

It is better policy, surely, to suggest and provide safe-

guards ourselves against individual wrong-doing in our ranks that may sully the reputation of medical men as a class, rather than to have such measures forced upon us from outside. Very respectfully,

BARTON COOKE HIRST.

REDUCTION OF GOITER BY THE FARADIC CURRENT.

To the Editor of THE MEDICAL NEWS,

SIR: An article in THE MEDICAL NEWS of December 3, 1892, page 634, entitled "Reduction of Goiter by the Faradic Current," calls to mind a similar case of my own:

Miss P., fourteen years old, consulted me for a "large neck," which had been noticed first about one year previously. She was a strong, healthy girl, and experienced no inconvenience, save the embarrassment from the ungainly appearance.

When I first saw her the neck measured fourteen and a half inches in circumference. The faradic current was applied as strong as could be borne for fifteen minutes, placing the poles on opposite sides of the neck over the thyroid bodies.

At the second sitting the neck measured fifteen inches, an increase of half an inch. After this it began to rapidly diminish in size, and after ten sittings it had reached the normal size, measuring twelve and a half inches, and has remained so ever since (four months).

Respectfully, M. B. VEEDER, M.D.

CENTRAL SQUARE, N. Y.

SURGICAL INTERFERENCE IN TYPHOID FEVER.

To the Editor of THE MEDICAL NEWS,

SIR: In your interesting leader on "Surgical Interference in Perforated Typhoid Ulcer" (THE MEDICAL NEWS, November 26, 1892, p. 613), you observe that "But two text-books refer to the possibility of surgical interference in this form of perforative peritonitis."

If you will kindly refer to page 472 of my *Text-book of the Eruptive and Continued Fevers* (reviewed in THE MEDICAL NEWS, July 30, 1892), you will find the question, "Shall Laparotomy be Performed for Intestinal Perforation in Enteric Fever?" fully discussed and ample justice done to Dr. Weller Van Hook's paper (THE MEDICAL NEWS, November 21, 1891).

I remain, dear Sir,

Yours faithfully,

J. W. MOORE.

40 FITZWILLIAM SQUARE, WEST DUBLIN.

NEWS ITEMS.

Regulation of the Milk-supply.—At a recent meeting of the New Jersey State Sanitary Association, Professor Leeds made a most earnest and urgent appeal for a more stringent regulation of the milk-supply in the interest of the public health, and especially as far as infants are concerned. The immediate occasion of the appeal was the revelation of the deplorable and dangerous condition of the cattle in Hudson County, although similar conditions likewise exist in other parts of the State. After the swill-milk stables had been driven out of New York City and Brooklyn, their proprietors took refuge on the Jersey side of the Hudson river. Over two thousand stables, with upward of ten thousand cattle, are given up to the manufacture of brewers' grains into milk, the cow being the factory in which this nefarious business is carried on. In many cases the fresh cow is driven into a stall, her head is fastened to a board with a vertical slot, so as to admit of no motion except an up-and-down movement of the head. Thus imprisoned, the cow is fed exclusively on brewers' grains until she sickens or runs dry. The stables are filthy, unventilated, and shockingly foul. The feeding results in chronic diarrhea, and the cow is no longer capable of calving again, but is sold for butchers' meat.

The crowding, heat, filth, and lack of ventilation cause the animals to fall victims to disease, so that tuberculosis and other dangerous maladies run riot among them. The milk, even when the cows are not diseased, is not fit for food. It spoils rapidly, has an unpleasant odor, forms a hard, indigestible curd, and contains actively poisonous principles; but very commonly the cow is tuberculous or otherwise diseased, and then, in addition, the germs of disease are present in the milk, and, without their origin being suspected, illness and death are carried to multitudes of children.

The water used in these stables is frequently taken from wells in the yards, which are simply drains for manure and sewage. This water is used in washing the cans and utensils and in watering the milk. Such water is full of impurities and bacteria and powerfully assists in the dissemination of disease. Not only in these stables but throughout the State, tuberculosis among cattle is prevalent to a dangerous extent. The remedy for these evils is to be found in an efficient system of official dairy-inspection and sanitary milk-control. Only by this means can pure milk from healthy cows be delivered to the consumer in the same wholesome condition as when freshly drawn at the dairy. To this end tuberculous cattle should be killed. Moreover, the State inspectors should not only see that all persons engaged in the production and sale of milk are carrying on the business in conformity with the State laws, but should also be required to issue licenses to them for a limited period, say for one year, to that effect, such licenses to be forfeited on infraction of the law. The effect of these regulations would be to confine the milk-business to suitable country dairies, and to farmers and others competent to carry it on in a safe and proper manner.

Railway Accidents in the United States.—According to the Report of the Interstate Commerce Commission the following were the railroad casualties for the year ending June 30, 1891: The number killed during the year was 7029, and the number injured was 33,881. Of these totals, the number of employés killed was 2660, and the number injured was 26,140. The number of passengers killed was 293, and the number injured was 2972. A classification of casualties according to the kind of accident shows that 415 employés were killed, and 9431 injured while coupling and uncoupling cars; 598 were killed and 3191 injured by falling from trains and engines; 78 were killed and 412 were injured from overhead obstructions; 303 were killed and 1550 were injured in col-

lisions; 206 were killed and 919 were injured from derailment of trains; 57 were killed and 319 were injured from accidents to trains other than collisions and derailments already mentioned; 20 were killed and 50 injured at highway crossings; 127 were killed and 1427 were injured at stations; the balance, which makes up the total of 2660 killed and 26,140 injured, is due to accidents which do not naturally fall in the classification adopted for report. Referring to passengers, 59 were killed and 623 injured by collisions; 49 were killed and 837 injured by derailments; 2 were killed and 34 injured by other train-accidents; the balance, making up a total of 293 killed and 2972 injured, being assignable to accidents at highway crossings and at stations, and to other kinds of accidents.

Not only is the number of accidents of the year covered by this report greater than that of previous years, but, when compared with the increase in employés, it is observed that it is relatively greater than that of the previous year. Thus, during the year ending June 30, 1891, 1 employé was killed for every 296 employés, and 1 employé injured for every 30 men in railway service. The corresponding figures for the previous year are: 1 man killed for every 306 employés, and 1 man injured for every 33 employés.

Third Congress of American Physicians and Surgeons.—The first meeting of the Executive Committee of the Third Congress of American Physicians and Surgeons was held December 27th, in Philadelphia. The committee was organized by the election of Dr. William Pepper as chairman, and Dr. Newton M. Shaffer as secretary. The following officers of the Congress were elected: Dr. A. L. Loomis, of New York, president; Dr. W. H. Carmalt, of New Haven, secretary; Dr. John Shaw Billings, of Washington, treasurer; and Dr. S. C. Busey, of Washington, chairman of the committee of arrangements. It was decided to hold the next meeting in Washington in May, 1894.

The Clinical Journal is the name of a new publication emanating from London, of which some ten numbers have already appeared. Each number is promised to contain one or more lectures or articles, short clinical notes, prescriptions, and a series of articles on the spas and baths of the United Kingdom and Europe. From time to time a supplement will be issued, containing notes of recent books and other publications, clinical reports on drugs, foods, and instruments and other appliances and articles recognized and used for medical and surgical purposes.

The Medical Society of the State of Pennsylvania will meet at Williamsport, May 16th, 17th, 18th, and 19th. All who desire to read papers at the session must submit them, not later than March 1st, by title, to Dr. H. G. McCormick, Chairman of the Committee of Arrangements, Williamsport.

CORRECTIONS.—In THE NEWS of January 7th, the word *unwillingly*, line 3, page 27, first column, should have been printed *unwittingly*. On page 12, second column, second line from the bottom, for *vaginal* read *virginal*.

BOOKS AND PAMPHLETS RECEIVED.

Some Observations on Lateral Curvature of the Spine as a Result of Empyema, with Report of a Case. By Charles H. Merz, A.M., M.D., Reprint, 1892.

A Study of the Artefacts of the Nervous System. By Ira Van Gieson, M.D. Reprint, 1892.

Witty, Wise, and Wicked Maxims. With a Preface by Henri Pene Du Bois. New York: Brentano's, 1892.

Report of a Case of Right-angled Deformity of Knee, Resulting from Tubercular Arthritis. By James F. E. Colgan, A.M., M.D. Reprint, 1892.

A Study of Flat-foot: with special attention to the Development of the Arch of the Foot. By John Dane, A.B. Reprint, 1892.

Suggestions for Improved Plans for Treatment of Recent and Recoverable Cases of Insanity. By John B. Chapin, M.D. Pamphlet, 1892.

Hygiene and Public Health. By Louis C. Parkes, M.D. Philadelphia: P. Blakiston, Son & Co., 1892.

The Management of Cancer of the Uterus complicated by Pregnancy, with Report of a Case. By A. Vander Veer, M.D. Reprint, 1892.

Some Considerations in Reference to Uterine Hemorrhage, Puerperal and Non-puerperal. By A. Vander Veer, M.D. Reprint, 1892.

Hystero-Epilepsy, with Report of Cases. By A. Vander Veer, M.D. Reprint, 1892.

What May be Considered Normal Corneal Astigmatism? From Kerato-metric Measurements of Three Hundred Eyes. By H. V. Würdemann, M.D. Reprint, 1892.

The Operation for Excision of the Ossicula in Chronic Aural Catarrh, with an Instance of a Failure. By H. V. Würdemann. M.D. Reprint, 1892.

Anemia of Tuberculosis. By B. K. Rachford, M.D. Reprint, 1892.

The Choice Between Extirpation and Colotomy in Cancer of the Rectum. By Charles B. Kelsey, M.D. Reprint, 1892.

Report of a Case of Sudden Death from Coronary Obstruction, with a Specimen. By Cassius D. Westcott, M.D. Pamphlet. Chicago, 1892.

Codeine in the Treatment of the Morphine Disease. By J. B. Mattison, M.D. Reprint, 1892.

Enteroclysis of Ice-water in the Treatment of Intestinal Diseases of Children. By Julius L. Salinger, M.D. Reprint, 1892.

Finger-prints. By Francis Galton, F.R.S. London and New York: Macmillan & Co., 1892.

The Chemical Basis of the Animal Body. An Appendix to Foster's Text-book of Physiology. By A. Sheridan Lea, M.A., D.Sc., F.R.S. London and New York: Macmillan & Co., 1893.

Some Practical Points in the Diagnosis of Spinal-Cord Lesions. By Frederick Peterson, M.D. Reprint, 1892.

Typhoid Fever in the Light of Modern Research. Facts and Doubts about Cholera. By L. Bremer, M.D. Pamphlet. St. Louis: Nixon-Jones Printing Co., 1892.

The Collegiate Degree as an Evidence of Fitness for the Study of Medicine. By L. Harrison Mettler, M.D. Reprint, 1892.

An Inquiry into the Relative Merits of Vaginal Hysterectomy and High Amputation or Partial Extirpation by Galvano-cautery in Cancer of the Cervix Uteri. By John Byrne, M.D., M.R.C.S.E. Reprint, 1892.

Purulent Ophthalmia Neonatorum as a Cause of Blindness. By Frederick E. Cheney, M.D. Reprint, 1892.

The Importance of Correcting Ocular Defects in Functional and Nervous Disorders. By G. L. Walton, M.D., and Frederick E. Cheney, M.D. Reprint, 1892.

Dangers of Malt Liquors as Galactagogues. By J. Wellington Byers, M.D. Reprint, 1892.

The Metschnikovian Theory of Vital Resistance. By J. Wellington Byers, M.D. Reprint, 1892.

Index-Catalogue of the Library of the Surgeon-General's Office, U. S. A. Authors and Subjects. Vol. XIII: *Sialagogues-Sutugin*. Washington: Government Printing Office, 1892.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

A CONTRIBUTION TO THE SUBJECT OF ACUTE PLEURISY: ITS PATHOLOGY, ETIOLOGY, SYMPTOMATOLOGY, AND TREATMENT.[1]

BY FRANK S. PARSONS, M.D.,
OF NORTHAMPTON, MASS.;
FORMERLY LECTURER ON DISEASES OF CHILDREN IN THE COLLEGE OF PHYSICIANS AND SURGEONS, BOSTON, MASS.

THE proper classification of an inflammatory affection of a serous membrane, and especially of the pleura, is not an easy task. The terms "acute," "subacute," and "chronic," that have been applied to diseases of that nature, are often subjects of much criticism, no matter what pathologic lesions or symptomatic indications they may be derived from.

In considering acute pleurisy, I shall not hope to unravel these disputed questions, and only trust that I shall not fall into the common error of making them more intricate.

The term "acute" pleurisy indicates an inflammatory condition, more or less general in extent, of the serous membrane lining the pleural cavity, with sero-fibrinous or purulent deposits, primary or secondary in nature, of microbic or other origin, with a certain degree of sharpness of attack, and in which the height of the disease is attained in a few days, ten at the most, and accompanied by a rise in temperature of greater or less extent. Acute pleurisy may thus be (1) dependent on preëxisting disease or lesions, the development of which may cause sudden intense inflammatory conditions of the pleura, more or less extensive; or (2) it may be an idiopathic disease.

PATHOLOGY.—Hyperemia, or congestion of the bloodvessels within the serous and subserous connective tissue, causing swelling, redness, and edema of the pleura, is the first noticeable lesion of acute idiopathic pleurisy. This congestion may take place in some localized spot and rapidly extend to a greater or less degree; or it may, from the first, present quite a general appearance over the surface of the pleura. Soon the smaller and weaker capillary vessels rupture, producing ecchymotic spots over the membrane, and, at the same time, infiltration of the subserous connective tissue occurs, with a proliferation and detachment of epithelial cells. As the process progresses the pleura is studded with fine granulations upon its surface, in which appear embryonic cells. These tend to organize the newly-formed connective tissue into firm fibrinous bands, which, in old cases, are often found stretching across the pleural cavity, and constitute the so-called neo-membranes. Finally, from the congested serous membrane is poured into the cavity a liquid resembling in all respects the plasma of the blood, except that it is more dilute; the degree of dilution, however, varies with the intensity of the congestion, according to the coagulability of the fibrin in the effused fluid. There are, also, red blood-corpuscles and leukocytes in the liquid; but in simple sero-fibrinous pleurisy the red globules are not in sufficient numbers to cause any marked discoloration; if such occur, the pleurisy is termed "hemorrhagic."

"Inflammation," says M. Germain Sée,[1] "is a struggle for life, and not a destructive process; it is essentially a vital phenomenon eminently reactionary against a morbid agent." He believes that the teachings of microbiology show that inflammation is a physiologic process strongly exaggerated; a general struggle of the organism against microbic invaders. "The first step in this process," he says, "is leukocytosis, or the exaggerated production of white corpuscles in the blood; and the second is the absorption and destruction of microörganisms by these leukocytes, showing the defensive action of the latter; this is called "phagocytosis."

Certain physiologic functions are attributed to the phagocytes:

1. They carry from the albuminates in the intestinal canal material for combustion in the tissues.

2. Owing to their ameboid movements they are capable of transporting to distant parts of the body substances in their vicinity.

3. They possess, under certain conditions, a reproductive function, and a power of collecting themselves in vast quantities in certain localities.

4. They have what is known as a chemotactic function; so that the leukocytes thus play a considerable rôle in the morphologic contexture, as well as the chemistry of the body.

The French supporters of the germ-theory of disease believe that when microbes have penetrated the organism, the leukocytes increase; that the conditions that bring them to the blood carry them to the point of excitement, and that it is a chemical

[1] Read at the meeting of the New York State Medical Association, held in New York City, November 15, 16, 17, 1892.

[1] Bulletin de l'Académie de Médecine, May 10, 1892, p. 680.

property that draws them there. This, they claim, is true of all high-grade inflammations, as pneumonia, but not of the low grade, as malarial fevers.

In pneumonia there is an increase of leukocytes during the height of the disease, but as the fever abates the number of leukocytes diminishes. It is, therefore, held that the real termination of the disease, whether by crisis or lysis, occurs at the time when the leukocytes begin to diminish in the blood.

In acute inflammations there are three stages of development: First, vascular dilatation; second, activity and proliferation of endothelium; third, exudation, with diapedesis of leukocytes. As a consequence of these three stages it is claimed that a great afflux of phagocytes takes place toward the point of attack, both in purulent as well as in catarrhal inflammations; it is less seen in serous varieties, and, perhaps, not at all in infectious processes, the reason for this being that the infectious matters destroy the phagocytic function of the leukocytes, and hence the body has no protecting element against the enemy, and becomes the prey of the microbe. Suppuration is considered no exaggeration of inflammation, but is primarily due to the action of streptococci or staphylococci, and although great numbers of phagocytes may be found, yet their defensive action is much harassed by their deadly enemy, the pus-germs.

From the foregoing, if we are to accept this doctrine, we may conclude that inflammation is a physiologic process to develop phagocytes for the purpose of antagonizing microbes.

Anatomically the pleura is a great lymphatic sac, contiguous with the arterio-pulmonary system, and naturally derives its serosity from that source.

According to the eminent French teacher, M. Guerin,[1] "pleurisy is nothing else than lymphangitis." "If one injected the pulmonary artery," says Guerin, "with colored liquid, it would be found that the liquid would appear in the polygonal ramifications of the lymphatics of the pleura."

Moreover, he has practised on the cadaver the injection of bullock's blood in the same manner, and finds that he obtains a serosity from the pleura which, if much force is used in the process of injecting, becomes bloody, or red in color. This is on the healthy lung and pleura. If, on the other hand, he injects a colored liquid in a subject that has suffered and died from pleurisy, there will be found no coloring-matter in the meshes of the lymphatics except those that have not been affected by the inflammatory process. If this be true, we can readily see that when from some cause the lymphatics of the pleura become congested and swollen, and the natural channels for the lymph impeded, an edematous condition of the subserous connective tissue will arise, due to forced diapedesis of the serous exudate, and cause the fluid to ooze from all parts into the cavity.

If, then, the lymphatic stoppage is complete enough, and the force behind is strong enough, there will also be more or less diapedesis of red blood-corpuscles, and hence the hemorrhagic pleurisy. If we find leukocytes in the lymphatic exudation, does that not best explain the formation of pus? It has been stated that the serous exudate of acute pleurisy does not differ materially from the plasma of the blood. (The reason for this appears plain if we consider the contiguity of the arterial capillaries with the lymphatics.) If drawn off, it will coagulate, often spontaneously; if beaten or whipped, it will show a deposit of fibrin; and the constituents are the same as the plasma of the blood, except in relative proportion.

It often happens, when one is practising puncture to draw off the effusion of acute pleurisy, that the needle, if small, becomes clogged with fibrinous flocculi. From this fact, it is argued by M. Lancereaux,[1] that these flocculi, and more especially the finer ones, become obstructed in the openings of the lymphatics and produce a mechanical hindrance to the exit of the effused fluid by the thrombus thus formed. When this has occurred to such an extent that it impedes the absorption of liquid beyond the natural time required for the evolution of the disease, he avers, "one must wait for the disintegration and absorption of the clot before any diminishing of the quantity of the fluid by nature takes place."

Secondary pleurisies, or those acute attacks from some preëxisting disease which often occur, doubtless present in many cases the pathologic lesions in the pleura upon which such disease depends; but I can see no reason for the opinion of some authors, that every pleurisy is dependent on lesions of preexisting maladies, and especially tuberculosis.

ETIOLOGY.—In considering the causation of acute pleurisy, one must of necessity admit that there are two general classifications from an etiologic point of view:

a. Those that are not due to any preëxisting disease;

b. Those that are so due.

At the present day there are many and diverse opinions held by eminent medical men as to the factors that produce primary idiopathic pleurisy. There are, indeed, those who would go so far as to say that all pleurisies are tuberculous in origin, and, hence, secondary.

[1] Bulletin de l'Académie de Médecine, April 26, 1892.

[1] Bulletin de l'Acad. de Méd., May 3, 1892, p. 661 *et seq.*

Undoubtedly, many pleurisies deemed primary are in reality dependent on some complicating or preëxisting disease; but to say that a person must be weakened by constitutional maladies in order to become privileged to have pleurisy, seems as if we were carrying the causative factors beyond the point warranted by our pathologic research. I doubt not, if the chests of many persons who to-day are in good health and have never been cognizant of pleurisy were opened, we would find various traces of old adhesions and other ancient lesions of former pleurisies.

It must, therefore, be admitted, even at the present day of biologic research, that the etiology of acute pleurisy is often obscure: the microbe will not account for all the cases; neither will any other one causative factor. While it is difficult to state with certainty that pleurisy originates in perfectly healthy persons, because latent pathologic lesions cannot be appreciated, yet we know that it does occur in persons who to all appearances, to themselves and others, are in good health. M. Sée[1] maintains that the etiology of acute pleurisy is always microbic; in fact, that it is a bacterial disease; cold is simply a stimulus to the activity and development of the microörganisms.

M. Jaccoud[2] is of the opinion that in the human body many kinds and many thousands of microorganisms live in peace and harmony together so long as the functions are normal, but let a disturbing element arise, such as taking cold, and their physiologic relations become altered, so that they soon are hostile to each other and cause disease. Netter[3] claims that all forms of pleurisy are of microbic origin, but that the microbes producing them are of many different kinds.

M. Bechamp[4] says: "Microbes do not have so much importance in acute pleurisy as some would have them." He is certain that pleurisy may exist independently of tuberculosis, from the fact that at the age of thirty he was seized with acute pleurisy, and after the usual bleeding, blistering, and purging, he now, at the age of seventy-six, is still alive, and has not developed tuberculosis. In support of this, both he and Dieulafoy state that, in many cases, persons live ten, fifteen, and more years after the operation of thoracentesis, and do not develop tuberculosis.

That exposure to cold has a tendency to excite inflammations, and with them acute pleurisy, is no doubt true. Whether its influence is exerted through the nerve-centers, so as to directly cause pleurisy, or whether it acts simply as a stimulus to organized germs through whose activity the disease originates, is still a much-mooted question. M. Tresbot[1] does not doubt that acute pleurisy in horses is the direct result of an exposure to cold, especially when, after a long, hard drive the animal is allowed to stand unprotected and exposed to a chilling wind. He says that "ordinarily there is nothing in common between sero-fibrinous pleurisy in the horse and tuberculosis;" and also that "it is impossible to class sero-fibrinous pleurisy in the horse with an eruptive fever, or, indeed, with any periodic disease." On the other hand, M. Lancereaux[2] asserts: "Pleurisy should be rightly classed among the infectious maladies, and exposure to cold is nothing but an occasional exciting cause, while the action of the infecting agent still escapes us."

If we should accept the pathologic views of M. Guerin,[3] we might easily explain the causation of the congestion of the bloodvessels by peripheral irritation, and reflex action of the vasomotor nerves from exposure to cold. This, however, does not explain why such excitement should be directed particularly to the pleura.

In a paper on "The Cause of Syncope in Pleurisy," M. La Borde[4] has illustrated by experiment on animals that it is possible to produce a sero-fibrinous pleurisy in a few hours by the action of cantharidin injected into the blood. This leads me to ask the question, Is the causation of acute primary pleurisy ever, in a measure, governed by the ingestion of certain articles of food, taken just previously to an exposure to cold, *i. e.*, is the combination of the two forces sufficient to direct the action of inflammation toward the pleura?

The cause of acute purulent pleurisy is probably of microbic nature. Purulent pleurisies either begin as such, or are secondary to other diseases. Age and debility have much to do with the formation of pus, the young and aged being more susceptible to empyema. It is doubtful if simple sero-fibrinous pleurisies are ever transformed into the purulent form without the aid of outside interference.

Secondary pleurisies occur from a variety of causes, mostly from diseases microbic in origin.

While it may be rare to have pneumonia occur without some localized extension of inflammation to the pleura, it is doubtful if a general acute pleurisy, secondary to pneumonia, can be found without numerous pneumonia-cocci. In the same manner, the causation of pleurisy during an attack of typhoid fever, influenza, malarial fever, rheumatism, and kindred diseases, is undoubtedly due to the same influences that govern the coëxisting disease.

[1] Bulletin de l'Académie de Médecine, May 10, 1892.
[2] Ibid., June 7, 1892.
[3] British Medical Journal, June 7, 1892, p. 793.
[4] Bulletin de l'Académie de Médecine, May 17, 1892, p. 758.

[1] Bulletin de l'Académie de Médecine, May 17, 1892.
[2] Ibid., May 3, 1892.
[3] Loc. cit.
[4] Bulletin de l'Académie de Médecine, May 17, 1892, p. 709.

It is well known that pleurisy of an acute type may be secondary to tuberculosis; but there is considerable difference of opinion as to the proportion of cases arising from this source. M. Sée[1] claims that 68 per cent. of all pleurisies are due to this cause. This seems high, or else persons radically recover from tuberculous pleurisy more often than from any other form of tuberculosis. Dr. G. G. Sears[2] reports four hundred and fifty cases of pleurisy, of which 39 per cent. developed tuberculous disease. Others state that not more than 20 per cent. of pleurisies are tuberculous in origin. The differences, probably, lie in the particular train of cases various observers have met.

There is, however, no doubt that a certain number of cases of tuberculosis have their initial symptom manifested by an attack of acute pleurisy.

Symptomatology.—M. Lancereaux and other French observers believe acute pleurisy to be a well-defined cyclic malady,[3] because its lesions are always found unchangeable, and its evolution is as constant as that of pneumonia or of typhoid fever. It presents regular pathologic changes after each seventh day, and this fact allows a classification of the disease into three periods of evolution.

First: Seven days represent the time occupied for the increase of the pathologic lesions, at the end of which the effusion reaches the limit of its advance.

Second: The next seven days represent the time during which the pathologic lesions appear to remain stationary, and the effusion has not undergone any perceptible alteration in amount.

Third: From the fifteenth to the twenty-first day of the disease there takes place an absorption of the inflammatory products, including the effusion. These divisions, of course, cannot be made absolute, because individual cases differ among themselves; thus we all know that fluid-accumulations often completely fill the pleural cavity before the expiration of the first seven days, and when withdrawn reaccumulate; however, we may confidently expect at the end of the first period that in uncomplicated cases there will be no further effusion of fluid.

Each of these three stages has its respective symptoms, but they pass from one to the other without any pronounced expression of change.

In a majority of cases the first period of acute pleurisy is ushered in with a chill, announcing a greater or less rise of temperature, and accompanied with more or less pain in the affected side.

The pyrexia will generally determine the intensity of the inflammation; it seldom rises above 102° or 103°, unless the pleurisy is secondary to some other disease. Pain, which appears with the pyrexia, may begin as soreness in a circumscribed spot and progressively increase to an unbearable intensity; or it may at first be sharp and lancinating, at or below the nipple, from which point it becomes more or less diffused. The pain is increased on motion, and, for this reason, respiratory efforts are, so far as possible, restrained. A dry, hacking cough is generally present, but the pain it occasions calls for efforts at its suppression. After a few hours, when the effusion appears, the pain is moderated and gradually disappears, or its intensity is greatly diminished. The pulse is increased in frequency and generally firm, the rate varying between 100 and 120. As the disease progresses, dyspnea is often developed, and this may be due to several different causes. It may indicate abundant effusion, and be due to compression of the lung or displacement of the heart; it is most commonly a result of one of these. Again, it may be due to congestion of the lungs independently of compression. Edema of the lungs, capillary bronchitis, and rheumatic difficulties sometimes occasion dypsnea when very little fluid can be found in the cavity. Encysted pleurisies occasionally cause pain and dypsnea. Irregularity of the pulse and cyanosis are grave symptoms, largely dependent on displacement or weakness of the heart. Syncope may also be occasioned in various ways; the reflex action of pain is one of its chief causes, as we may often produce it artificially by electrifying some peripheral sensory nerve. Again, when the fluid fills the pleural cavity and is suddenly drawn entirely away, the reaction that follows may cause syncope.

Physical Signs.—These vary with the quantity rather than quality of the effusion. In the early stages of the disease they often establish the diagnosis, and in the later stages they determine the amount of liquid in the cavity of the chest. On inspection there is in the early stages restricted motion of the affected side, dependent at first on the amount of pain, and later on the accumulated fluid. The comparison with the sound side is very striking. In left-sided effusions there may be displacement of the heart-beat to the right of the normal, and when large effusions occur on the right side, displacement is sometimes to the left. On palpation, vocal fremitus is lost over a collection of fluid, and if the effusion is large on the right side, the liver may be felt to be displaced. On percussion, we may early find dulness over the lower posterior portions of the chest; this dulness gives place to flatness as the effusion appears and advances; above the fluid the percussion-note remains dull, while at its level, and below, it becomes flat. It will be remembered that the level of the fluid is not a hydrostatic one; but from the elasticity of the lung the level assumes a shape

[1] Bulletin de l'Académie de Médecine, April 19, 1892.
[2] Boston Medical and Surgical Journal, Feb. 25, 1892.
[3] Bulletin de l'Académie de Médecine, May 3, 1892.

resembling the letter S. Over the sound lung the vesicular resonance is more or less exaggerated. Dulness is likely to remain for a considerable time after the effusion has been absorbed. On auscultation, the respiratory murmur is enfeebled or absent, for the same reasons and in the same progressive manner as the loss of resonance on percussion occurs. Friction-sounds are sometimes heard at the beginning of the disease, but are more common at the close of the third stage. Some observers have indicated that the transmission of the whispered voice, or its absence, has direct relation to the diagnosis of serous or purulent effusions, but this is doubted by others.

No lengthy discussion of the physical signs of acute pleurisy is necessary here; these do not differ from their description as set forth in our modern text-books.

TREATMENT.—In considering the treatment of acute pleurisy we must recall the classification of its etiology, viz.:

First: Those cases that are dependent on some other disease for their cause, whether influenced by microbes or not, and hence are secondary pleurisies.

Second: Those cases that are of spontaneous origin, considered idiopathic, and hence are called primary pleurisies.

Physicians may likewise be divided into classes: those who consider pleurisy to be always a microbic disease, and those who do not.

In a recent discussion on this subject the eminent French author, Hardy,[1] said that acute pleurisy of sero-fibrinous nature was no better treated to-day than it was fifty years ago, and, except in purulent forms, no better results were obtained now than then, the death-rate at present being 10 per cent., the same as in the days of our forefathers. This statement may be astonishing to some of us who have been taught to look upon acute pleurisy as a not very fatal disease; however, some statistics would seem to bear out this opinion. Perhaps it would, therefore, be well to consider the modern methods of treatment and then compare them with those practised in the early part of the century.

To undertake the consideration of all the medications for pleurisy that have been launched upon us during the past few years would take more time and space than would be profitable for me to employ; suffice it to say that a majority of them have passed into disuse.

The modern medical treatment of acute pleurisy is by the following class of agents: First, by antiseptics, to combat microörganisms; second, by antipyretics, to combat fever; third, by evacuants, to eliminate the fluid.

[1] Bulletin de l'Académie de Médecine, May 1, 1892, p. 776.

Dr. Charles Talamon[1] has recently called attention to the action of sodium salicylate in pleuritic effusions, claiming for it the power of promoting rapid absorption of the fluid. He thinks it has a direct action on the inflamed pleura, because by the experiments of Rosenbach it is proved that the salicylates may be found in the serous cavities of the body after their ingestion by the mouth in doses of from ten to twenty grains. Whether the beneficial action on the fluid is due to the antiseptic nature of the agent, he does not state, and whether it is due to this or its diuretic action is still an open question. That sodium salicylate may be of use when the pleurisy is secondary to rheumatism there can be no doubt, but in the primary form to depend on its success as a germicide would be hazardous. However, the salicylates may be employed as antipyretics as advantageously as other remedies; they certainly combine the indications for an antiseptic, antipyretic, and diuretic.

The practice of injecting a solution of salicylic acid or other antiseptic into the pleural cavity to combat microbes in the effusion has been suggested by some, but the treatment seems harsh and uncalled for, unless employed in connection with surgical methods for the treatment of empyemas.

Antipyretics in acute pleurisy are only indicated when the fever rises to 101° or over, and as the fever seldom attains that height for any length of time their use is greatly modified.

Quinine may be advantageously employed in pleurisy depending on malarial poisoning, and during convalescence, as a tonic. Antipyrin, or the other coal-tar derivatives, may be useful in cases accompanied by hyperpyrexia, but none of these measures is calculated to reach the cause of the disease, or to modify its pathology.

The evacuants are administered in acute pleurisy with a view to reduce the amount of effusion after its accumulation.

Under this head, the diuretics play the most important part. Digitalis may support a weak heart, but its action in reducing a pleuritic effusion is small. Milk is often used as a diuretic, but its influence over fluid in this disease is doubtful; while as a food it ought not to be neglected.

The action of purgatives, drastic or saline, and of sudorifics, with a view to reduce the quantity of liquid in the chest, is of no value; moreover, they are often dangerous.

The pleuritic effusion is not really a question of hydropsy; the liquid of general ascites furnishes a chemical analysis quite different from the effusion of pleurisy; the latter is not simply a serum from the blood, but blood-plasma.

[1] New York Medical Journal, January 2, 1892.

In a recent paper on "The Treatment of Pleuritic Effusion," M. Sée[1] draws the following conclusions: "Antiseptics, diuretics, sudorifics, and purgatives, drastic or saline, have no kind of action on the effusion. Milk, which is a powerful diuretic, has no value here, except as a food. No one of these microbic diseases derives the least benefit from venesection. All aggravate the onset of the disease. Expectation is the only rational method of treatment, for sero-fibrinous pleurisy regularly passes through its different phases in two or three weeks, and up to that point all medication is useless." In a recent paper on this subject, M. Lancereaux[2] says: "There is no more use in trying to ward off pleuritic fever than to ward off pneumonia or typhoid fever; however, it is necessary, relying on our pathologic knowledge of the lesions of acute pleurisy, to draw attention to the coagulation in the lymphatic system, and strive to remove it; while we may not succeed, it is the best practice to try."

In discussing the subject, M. Guerin[3] says: "This idea of pleurisy being a simple lymphangitis also gives a clear explanation of the sudden reabsorption of fluid in some cases that for a long time have proved refractory to all treatment. It indicates that the coagulum in the absorbent vessels has become reabsorbed and makes it possible for the fluid to be taken up; we should therefore attempt the prompt moderation of the lymphangitis."

Of late, in the excitement of bacteriologic investigations, the profession had been content to disregard the teachings of our ancestors, and the good old methods in vogue at their time. We have regarded these diseases as cyclic in nature; maladies that must run their regular course in spite of all abortive treatment; sicknesses that are caused by microorganisms over which we have no control; hence, we must fold our hands and content ourselves with relieving of pain, until such time as the particular germ has loosened his besieging grasp.

This is the "expectant treatment of to-day, and this is the treatment eminent authorities hold out to us for acute pleurisy." "The expectant treatment," says Peter,[4] "is the do-nothing treatment, and this is what many bacteriologists practise. No physician has a right to practise inactivity in these cases when so much can be done toward curing pleurisy if energetic treatment is begun early."

To allow a patient to become weakened by pain and suffering, because pleurisy is a cyclic disease and should terminate spontaneously in two or three weeks, or, because the pathologic conditions are such that, by deferring active measures, one may with impunity puncture the chest and draw off a liter of fluid, is treating the wrong end of the disease. A physician should strive to diminish the intensity of a malady, if, indeed, he cannot shorten its duration.

What are the indications for treatment in acute pleurisy?

Briefly, they are as follows: 1. The relief of pain. 2. The reduction of fever. 3. The arrest of effusion. All of which depends on treating the cause.

It was of these indications our ancestors had a rare knowledge when they applied bleeding and localized vesications; when practised, these at once relieved the pain, reduced the fever, and there was little or no serous effusion found in their cases; moreover, if in this they were not entirely successful, the harshness of the sickness was notably diminished. By these methods the pathologic lesions were affected, and the cause of the pain and fever reached. In 1819, Laennec said: "If a plethoric subject had pleurisy, he required bleeding."

While it is undoubtedly true that the pendulum of exsanguination in inflammatory diseases oscillated too far in the early part of this century, and to the detriment of many, is it not also true that at the present time it has swung too far the other way, and "expectant treatment" is employed to the detriment of many? I believe the antiphlogistic treatment is indicated in just as many cases of acute pleurisy now, as in the days of our forefathers. That the treatment may be carried too far I do not deny; the judicious use of it at the right time is the essential point. Pain is almost wholly relieved by the revulsive methods in a short time; this probably being accomplished by the removal of the congestion and its baneful influences, if revulsion is practised early. At the present time, and in some form, opium is employed for the relief of pain; but does it lessen the congestion causing the pain, or simply dull the sensibility to the pain which is the result of the congestion? Revulsion lowers the fever, for which we now employ antipyretics, but will the antipyretic drugs alter the pathologic condition within the pleural cavity?

Farther on in this disease we often employ puncture of the chest to draw off the fluid, but have we not allowed the malady to reach that point by an early neglect to treat the cause efficiently, and thus converted what should have been a medical case into a surgical one? This certainly is to be deplored. Peter[1] goes so far as to say, that "By revulsive methods, early employed, one is able to prevent the serous effusion in many cases; to arrest it, if the secretion has begun to form, and finally to absorb it, if a small amount has collected." Andral and Bouilland[2] cite thirty cases in one year, treated anti-

[1] Bulletin de l'Académie de Médecine, April 19, 1892.
[2] Ibid., May 2, 1892. [3] Ibid., April 26, 1892.
[4] Ibid., April 26, 1892.

[1] Bulletin de l'Académie de Médecine, April 26, 1892. [2] Ibid.

phlogistically, with one death—percentage of mortality of three. Of seventy cases reported[1] in 1891, treated after the modern methods, there were seven deaths—a death-rate of 10 per cent. from acute pleurisy.

How should revulsion be employed in these cases?

Bouilland used to bleed twice and afterward apply wet cups and a large blister. This seems too energetic; yet I have recently been told by an elderly physician of my neighborhood that he once bled a woman with puerperal peritonitis until she fainted, and she had no more symptoms of the disease, and was soon about. One might employ wet cups and vesication more mildly, with equal success. "What is remarkable in these cases," says Peter,[2] "is the toleration of the system to these large bleedings, the rapidity with which the pain ceases and the local symptoms of pleurisy diminish." On the other hand, "Bleeding," says Sée,[3] "after doing so much harm, is springing up again insidiously in many diseases; it has no theoretic basis, and is little better than empiricism."

Can we learn anything from Nature as to the treatment of acute pleurisy?

There is pain from irritation of the intercostal nerves, due to the evolution of pathologic processes. Nature, in consequence of this inflammatory action, evolves a fluid which acts as a sedative to the injured nerves, and, little by little, the pain subsides. The fluid comes from the blood. This fluid is found to be exactly like the plasma of the blood, except in proportion; is it, therefore, not natural to assume that Nature bleeds her patient in the early stage of pleurisy? To be sure it may be the result of a congested condition, and, hence, one of pathology rather than one of treatment; nevertheless it depletes the vascular system, which, if we anticipate Nature by doing ourselves, we thereby arrest the pathologic condition and relieve Nature.

Regarding the application of blisters, there is a diversity of opinion, although it is generally held that they are useful adjuvants to scarification.

Metschnikoff advances the idea[4] that cantharides possesses an anti-bacterial tendency, and produces leukocytes which act as phagocytes, and proceed to destroy or change the character of the microbe. He would, therefore, inject a solution of cantharidin subcutaneously. Tresbot[5] has no doubt that a cantharides blister is of great value in the treatment of the pleurisy of horses. La Borde,[6] while advocating the use of cantharides blisters, calls attention to the fact that this agent is a poison, and capable of producing inflammation of the lung, bladder, or other viscus, and cautions against its use. There has been some belief that cantharides predisposes to the transforming of serous effusions into purulent ones, and especially in tuberculous patients. Potain denies this,[1] or the possibility of its happening, and maintains that a purulent effusion always starts as such. Counter-irritation may also be effected by the tincture of iodine painted on the surface of the affected side. Little in addition can be said of the treatment of purulent pleurisies prior to surgical interference, which is almost always required.

There is no positive way to differentiate them from the serous varieties, except by explorative puncture, but the indiscriminate use of the exploring-needle, ten or a dozen times, as recommended by some,[2] in search for pus, is to be condemned, even if no harm should chance to arise.

It is in childhood and old age that purulent pleurisy is most likely to occur. Why this is so, unless from a weaker state than is present in adults, is not easily determined; but in the treatment of this affection in children, this fact is to be borne in mind.

THORACENTESIS.—This operation, though always to be deplored, is often urgent and often useful. A discussion of its history, which may be found at length in *Pepper's System of Medicine*, is unnecessary in this place. Of late there has been much criticism for and against the operation by eminent authorities. That aspiration, as first practised by Bowditch, and later elaborated by Dieulafoy and others, is a simple, harmless operation, there can be no doubt; results will bear this statement out. All that is essential to the safety of the operation is thoroughly aseptic instruments, especially the aspirating-needle, and also some little skill in manipulation.

Thoracentesis, as practised by the majority of general practitioners, with any kind of trocar, which may have been used by them to open some abscess-cavity, or even with an aspirating apparatus that has not been perfectly cleansed, is a very dangerous operation.

It has been held by some that after the operation has been performed two or three times it produces a transformation of a sero-fibrinous effusion into a purulent one. This may be so; I do not deny that it often happens, but it is the operator and his unclean instruments that are at fault, rather than the effect of a puncture of the pleura; this is the reason we see one operator successful where another meets with failures.

As a rule, aspiration should not be performed in simple sero-fibrinous pleurisy until after the third week of the disease; and then only as the fluid tends

[1] Bulletin de l'Académie de Médecine, April 26, 1892.
[2] Ibid. [3] Ibid., April 19, 1892, p. 97.
[4] Ibid., p. 602. [5] Ibid., May 17, 1892. [6] Ibid.

[1] Bulletin de l'Académie de Médecine, May 17, 1892.
[2] Archives of Pediatrics, May, 1892, p. 353.

to remain stationary and unabsorbed, unless there is urgent need of interference to save life before that time. If the cause of the non-absorption of the fluid is (according to the views of Lancereaux) a stoppage of the lymphatics of the pleura by the formation of fibrinous thrombi in their orifices, and if we must wait until a disintegration of the clot takes place before the fluid will be absorbed, then no amount of aspiration will hasten the process of natural absorption until that time has expired. Moreover, the drawing off of the fluid will in many cases only tend to its reaccumulation up to the point it previously reached, because, according to his theory, if the fluid remains stationary to a given level or height within the cavity of the chest, there must be stoppage of all the lymph-spaces below that level; hence, no absorption is possible. If, then, we remove a part or the whole of the fluid, we do not necessarily remove the stoppage, and the reaccumulating fluid will in time reach its former height.

On the other hand, if, before practising thoracentesis, we wait until the disease has reached that period when we may expect these clots to be disintegrating and being taken up by the system, we then may be of some service to Nature in hastening absorption. This period is at about the end of the twenty-first day of the disease. However, there are times previous to this period, when life is threatened by the accumulation of fluid in the pleural cavity to such an extent that it compresses vital organs. When this occurs, it becomes necessary to draw off a certain amount of fluid by asp ration, in order to relieve distressing symptoms.

By what symptoms can we know that this danger is imminent?

When the fluid-accumulation has progressed to the extreme degree, there is dyspnea, from compression of the lung; more or less cyanosis, if the heart be displaced; flatness on percussion over most of the affected side, and sometimes accompanied with bulging of the intercostal spaces. However, if we wait for these symptoms to appear, there are strong dangers of being too late to render the assistance necessary.

There is in these cases no infallible sign by which we may discover the best time to operate.

Dyspnea, as we know, may be due to other causes than compression of the lung or displacement of the heart, and consequent twisting of the large arteries by fluid. Cyanosis and syncope are signs that may arise from hearts weakened by excess of pain, with little mechanical interference from an effusion into the pleura.

The most reliable test is by percussion; as by it we may arrive at an approximate estimate of the quantity of fluid contained in the pleural cavity. When the line of flatness has reached the second rib on either side of the chest, the left or right, Dieulafoy estimates the quantity to be about 2000 grams, and states it is time to operate. If, with this percussion-sign, there is dyspnea and some cyanosis, it is time to hasten the operation; as, while it is not right to puncture the chest too early, it is also hazardous to postpone the operation too long.

If, as often happens after early operative interference, the fluid should reaccumulate more or less rapidly, and the symptoms of distress reappear, a second operation would be imperative, and probably later on others would necessarily follow.

Only so much of the fluid should be removed in these cases as will render the patient more comfortable from the distressing symptoms, or remove any danger of immediate collapse. Sudden death has followed the removal of the entire amount of effusion at once, death being due to the congestion occurring from the sudden return of the compressed and distorted viscus to its normal position. A symptom of this danger is said to be the albuminous expectoration observed in these cases. The fluid should therefore be withdrawn gradually through a fine needle, and not more than a third, or perhaps a half, of the total quantity of fluid in the chest-cavity be removed at once. It is better to perform the operation several times in this manner than to have a fatal issue from the evacuation of too great a quantity of liquid at once.

In purulent pleurisies no time should be lost in evacuating the pus, observing the same precautions necessary, if by aspiration, as in serous effusions. In children with purulent pleurisies, repeated aspirations are advisable before resorting to more severe surgical methods; but in adults, if a reaccumulation of pus occurs after one aspiration, it is usually better practice to treat the empyema as one would an abscess-cavity and establish a system of free drainage. As these several methods of drainage come strictly under the head of chronic pleurisy, I shall not occupy more time here with a discussion of them.

Finally, I wish here to suggest a method of treatment for pleuritic effusions that I must frankly state is at present a simple theory, because I have not had the time or opportunity to clinically test its value. It is the employment of electrolysis to cause absorption of pleuritic effusions, based on the same theories as when it is used in serous effusions elsewhere. In a word, the operation might be called "electrocentesis." I have not found that any literature on the subject has ever been published—or ever ought to be published; however, electrolysis, as we know, has been employed quite commonly in serous effusions of other localities, such as cysts, hydrocele, tumors, etc., with great benefit in many instances. Why should it not be used with benefit in the serous effusion of pleurisy?

Electricity is used to hasten the absorption of fluid in cysts; first, by its power to chemically transform the watery into gaseous elements; second, by its direct stimulating influence on the lining membrane of the sac.

Is there any reason to expect any different results from the use of electricity, in a similar manner, in pleuritic effusions?

The technique of the operation recommended includes the use of the electro-puncture needle, thrust into the effusion; a clay electrode attached to the negative pole of a galvanic battery, and placed on the outside of the chest-wall. A current of a strength of from 30 to 50 milliampères, and perhaps more, could be safely passed through the fluid in this manner. Care should be taken that the needle be not thrust farther than just into the fluid, so that we get only electric action on the effusion and the costal pleura, otherwise we might electrify some vital organ in a manner not pleasing. From this application of electrolysis we might reasonably expect more or less coagulation of fibrinous matter and absorption of the fluid portions of the effusion. This we might expect to be in proportion to the strength of the current, and the length of time occupied in allowing the current to pass through.

The class of cases this method of treatment would probably benefit would be those in which thoracentesis for any reason could not safely be performed; those in which there has been repeated reaccumulation of fluid after aspiration, especially those of chronic tendencies; and, finally, those of secondary nature, particularly the tuberculous.

All antiseptic precautions usually necessary in any such operation should, of course, be observed.

ANTISEPTIC CATAPHORESIS IN THE TREATMENT OF DISEASES OF THE UTERUS AND ITS APPENDAGES.

BY WALLACE A. BRIGGS, M.D.,
OF SACRAMENTO, CAL.

"MEDDLESOME gynecology" and "uterine tinkering" are getting to be set phrases with those who seek to envisage gynecology as a branch of operative surgery. Emerson I believe it was who said, in substance, that one truth cannot be stated strongly without doing injustice to some other truth. But the surgical exclusivists are not content with stating their truth strongly; they stoutly maintain that there is no other truth. The blind spot that Holmes says is normal to all of our brains no longer remains with them a spot merely, but invades whole convolutions, if not the entire anterior lobe of the cerebrum. For them the "sensitiveness" of the uterus exists as a reality instead of a myth, like "sensitiveness" of the peritoneum, dissipated by cleanliness and antisepsis. By their "damnable iteration" many of us have come to believe that the knife constitutes our entire gynecologic armamentarium. In consequence, abdominal surgeons, like the men of Roderic Dhu, spring from every cover, fully equipped to do the liveliest execution. I protest against this opinion and this practice. I deny that it is the *summum bonum* of woman to be relieved of the intrinsic insignia of her sex. We are indeed too often reduced to the sad and humiliating necessity of such mutilation, and so are we to that of amputations of legs and arms; but the world believes that amputations are to be averted rather than courted, and so it will soon believe of celiotomies. It is no less the duty of the physician to obviate the necessity of sacrificial operations than to perform them when indicated.

Rational methods of treatment, then, that propose a *restitutio ad integrum* of diseased organs and a coincident prophylaxis of disease by extension to important adnexa may not be contemptuously dismissed as "uterine tinkering." Such a method is the antiseptic treatment of endometritis.

In the report of the Committee on Gynecology of the Medical Society of the State of California for the current year, of which an abstract appeared in the May number of the *Occidental Medical Times*, I described this method somewhat in detail, and it is my purpose here to invite attention to one element only of that method, viz.: antiseptic cataphoresis.

It need not be assumed, for it has been demonstrated by the history of gynecology, the record of therapeutic groping and wandering in a pathologic dark continent, that the uterus is tolerant of everything but infection. Against infection in the treatment of diseases of the uterus and its appendages antiseptic cataphoresis appears the most positive and efficient safeguard.

As quoted by Thomas, Scanzoni says that he does not remember to have been able to cure a single case of abundant uterine leukorrhea of several years' standing. In the treatment of these cases, who has not exhausted every resource of the healing art, as well as the forbearance of his patients, who have at last departed for "fresh fields and pastures new," uncured and ungrateful?

How shall we explain the inveteracy of these cases? The investigations of Bumm have shown that the gonococcus is endowed with an "eminent invasive force." It penetrates both the epithelial and sub-epithelial tissues. In the case of a moribund paralytic, Bockhart has demonstrated that it invades the lymph-vessels and even the capillary bloodvessels, and, although his conclusions have been warmly controverted, I am inclined to accept them, not only because of their intrinsic probability (for we should expect less resistance from the tissues

of a paralytic inoculated at death's door than from the tissues of those who acquire gonorrhea in the usual way), but also because they afford a rational explanation of the occasional development of so-called gonorrheal rheumatism. In cases of metritis Peraire found in the mucous tissues and in the tissue-cells the same microörganisms as in the uterine secretions.

We need seek no further, I think, for an explanation of the monotonous futility of the applicator and the comparative efficiency of the curette. The chronically inflamed uterus may be not inaptly likened to a chronic abscess communicating externally by a long and tortuous sinus. To effect a cure, the mucosa of the former, like the walls of the latter, must be either disinfected or destroyed. Without in the least disparaging the curette, it may be said that the true spirit of medicine would incline us *ceteris paribus* to conservative rather than sacrificial procedures; to disinfection rather than destruction.

In the uterine cavity the applicator is a useless and dangerous instrument. While it does not disinfect either the walls or the cavity, it does produce abrasions that may be the point of departure of new and serious trouble. If thoroughly done, antiseptic cataphoresis obviates this danger absolutely. It disinfects not only the cavity, but also the mucosa of the uterus and produces important interpolar effects on the uterine and pelvic circulation and nutrition that are daily demonstrated clinically and yet are pronounced a figment of the imagination by those who, in electro-therapeutics, prefer intuition to experience.

Before proceeding to the consideration of the various conditions in which antiseptic cataphoresis is indicated, it may be well to describe the technique of the procedure itself. I have used several antiseptic solutions or electrolytes of which iodine in varying ratio, either in combination or in solution, is an essential constituent.

They are all efficient, but having observed two cases of severe frontal headache following the use of the stronger solutions of iodine, I have latterly used the weaker ones more frequently, although not exclusively. Either of the following solutions will be found satisfactory: beechwood creasote or camphor-creasote, 10; iodine, from 1 to 2; beechwood creasote or camphor-creasote, 10; sodium iodide, 0.5; iodine, from 1 to 2.

The patient is put in the semi-prone position, which facilitates the introduction of the electrode and the escape of gases developed by electrolysis. A self-retaining speculum is introduced, the vagina and cervical canal are cleansed, and the direction and size of the latter ascertained. If the canal of the cervix be not large enough to permit the ready passage of the electrode and the simultaneous reflux of uterine secretions, redundant electrolyte and electrolytic gases, it should be sufficiently dilated either with Hegar's bougies or with a pair of strong dressing-forceps.

The active surface of the combined intra-uterine syringe, applicator, and electrode is then wrapped with a thin layer of absorbent cotton, into which a small but strong thread is wound and left loose about the shaft of the instrument, for the purpose of withdrawing the cotton should it slip from the electrode and remain in the uterus. The anterior lip of the cervix is then seized and fixed with a small tenaculum, the electrode dipped in the antiseptic electrolyte, passed through the cervix, gently turned either to right or left, and carried well into one cornu. The conductor is now attached, and the current is turned on and slowly carried to the maximum desired. The electrode is allowed to remain in the cornu from one to three minutes, while from three to six or eight minutes are occupied in sweeping it across the fundus to the opposite cornu, where it remains again from one to three minutes, when the current is turned off and the electrode removed. During the passage of the current the electrolyte is injected, drop by drop, until from 5 to 10 minims have been introduced.

The applications of antiseptic cataphoresis in gynecology are numerous, and I shall now briefly consider those that I have found preferable to the treatment usually employed.

Chronic metritis, chronic endometritis, subinvolution, cervical endometritis, and cervical erosions are classed together because of the similarity of their origin, pathology, and treatment. It is probable that metritis and endometritis rarely exist as separate and distinct diseases, but that each ordinarily accompanies the other, and when predominating gives name and characteristics to the dual affection. Endometritis would seem to be the primary disease which by extension produces and by persistence maintains an inflammation of the uterine parenchyma. Subinvolution is the product of uterine infection engrafted on the puerperal condition. All of the affections here grouped together are of infectious origin, and in all of them the uterine cavity and the mucosa are the breeding-ground of the infectious organisms. Cure is to be effected by the removal, first, of the cause of the disease, and secondly, of the results. Disinfection, then, complete and permanent, constitutes the causal treatment. For this purpose, nothing in my experience compares with antiseptic cataphoresis, which may be used when perhaps any other form of local interference might not unjustly be termed "meddlesome," as the history of the following cases will indicate:

Mrs. S. came to my office April 23, 1892, complaining of profuse leukorrhea, of pain in the pelvis and back, and of supra-pubic tenderness. She was unable to be on her feet for any length of time, and had given up her position of housekeeper, because unable longer to perform its duties, and had spontaneously taken to bed, where she had remained most of the time for the previous week. Rest had given her little relief, and she was barely able to get to my office—just a square from her room.

The uterus was found swollen, tender, retroverted, and discharging a large quantity of muco-purulent secretion. A circular erosion of the cervix, about an inch in diameter, surrounded the os. The adnexa were tender, although no evidence of purulent accumulation could be discovered.

Positive antiseptic cataphoresis was practised every third day, and antiseptic packing every day from this date until May 24, 1892. Constant and rapid improvement was manifest from the first application, and on June 1st, while there was still a slight mucous discharge from the cervix, the subjective symptoms had disappeared entirely, and the patient went to work in a hotel, where she made sixty beds daily, besides doing much other chamber-work. She has reported twice since, looks and feels well, and continues at her work.

Mrs. P., housekeeper, sent for me May 10, 1892. She had been suffering for three or four months with profuse leukorrhea, menorrhagia, pain in the pelvis and sacral region radiating down the thighs, becoming so severe at the menstrual periods or on exertion as to keep her in bed. The uterus was sensitive, swollen, and retroverted. A profuse muco-purulent discharge was issuing from the cervix. The peri-uterine tissues were so tender as to give rise to the suspicion of perimetritis. Under phenacetin and bromide, however, the pain subsided and the patient was able to ride to the office on May 16th. The uterus was tender and the discharge unabated. Positive antiseptic cataphoresis (40 m.a. 10 minutes) was employed and repeated every third day until June 15th. Immediate and rapid improvement was manifest, and on June 25th the metritis had wholly subsided, and the patient, although retaining the displacement, considered herself well, and was discharged.

SALPINGITIS.—Schroeder believes that salpingitis is always secondary to endometritis, and that the mucosa furnishes the only pathway of infection. That this rule is liable to exception is probable, but that it holds true in a great majority of cases is certain. As in the treatment of Eustachian inflammation we find it of the utmost importance to cure a coincident and predisposing pharyngitis, so it is of equal importance in the treatment of salpingitis to cure the predisposing endometritis. Negative antiseptic cataphoresis meets the indication in these cases better than any other means with which I am acquainted. Negative cataphoresis is to be perferred, because it promotes drainage and depletion, which, on the contrary, positive cataphoresis rather hinders. Antiseptic drainage and depletion of the uterus diminish the inflammatory swelling about the tubal orifices and thus facilitate drainage of the tubes and consequently their restoration to a healthy condition.

If carefully and thoroughly practised in appropriate cases I can conceive of no danger whatever attending negative antiseptic cataphoresis in tubal inflammations after the subsidence of acute symptoms. In cystic salpingitis, whether purulent or not, one would naturally incline to extreme care, if not to absolute non-interference except *per abdominem*, but even here I believe that the dangers of the usual electric treatment have been greatly exaggerated by the surgical exclusivists. Antiseptic cataphoresis may be employed with less local disturbance, and consequently less danger of rupture of the distended tube or extrusion of pus, than attend defecation; yet no one locks up the bowels to obviate this danger.

In the treatment of salpingitis, however, negative antiseptic cataphoresis possesses other advantages. By the cure or amelioration of the endometritis, the likelihood of reinfection of the tubes is diminished, and, in case surgical intervention prove necessary, the physician will not be humiliated and the patient disheartened by seeming failure of the operation due to a residual metritis. Moreover, it is frequently difficult and sometimes impossible to determine how much of the suffering is tubal and how much uterine. Cure of the metritis will solve this difficulty and not rarely save the patient from the well-meaning but intemperate celiotomist. By this method I have treated three cases of salpingitis, two of gonorrheal and one of unknown origin. Of these, one is objectively cured, although she still complains of occasional and slight pain in the region of the left tube; one received but three treatments, declared herself better, and, against my protest, took a journey of a hundred miles by rail—with what result I have yet to learn; the third, of unknown origin and long standing, received four applications, without any noteworthy result, when the treatment was interrupted by my absence, and the patient has not yet returned. In none of these cases was there the slightest untoward symptom in consequence of the treatment.

UTERINE FIBROIDS.—The brilliant results of electric treatment of intra-mural and submucous uterine fibroids have not exempted it from the reproach of an occasional catastrophe. Such catastrophes, however, were very infrequent even in the tentative period of Apostoli's work, and have all but disappeared under an improved technique. I believe that they may be reduced to an absolute minimum by the adoption of antiseptic cataphoresis in conjunction with the precautions usually observed. Why,

it may be asked, are we, in these cases, to disinfect the vagina and cervix and not the uterine cavity itself? Such "disinfection" is ordinarily mere show without substance; for in the first place, microörganisms by prolonged residence in the vagina become "domesticated" and, in a large measure at least, innocuous; and in the second place, pathogenic microbes swarm not only in the uterine cavity, but also in the tubes, in many if not in most cases of advanced fibroid disease. One of the chief benefits of Apostoli's treatment of uterine fibroids is the cure or relief of a coincident metritis. This it would seem, in most cases, constitutes the so-called symptomatic cure. Antiseptic cataphoresis hastens this cure. In addition, it is not at all improbable that by its means remedies may be introduced that will have a regressive influence on the neoplastic tissue. In practice I have used this method sufficiently to be convinced of its superiority, but not to enable me to speak with positiveness as to how much it may accomplish.

DYSMENORRHEA.— Dysmenorrhea depends on a variety of conditions, foremost amongst which is the neuropathic diathesis. Many cases, I believe, are essentially reflex neuralgias akin to trigeminal neuralgia due to exposure of the dental nerve. Here we shall very often find a catarrhal condition of the endometrium and hyperesthesia, especially at the internal os. It is true, as I can testify from my own experience, that excellent results may be obtained by the usual electric treatment. This, however, is inferior to cataphoresis in two respects—the absolute immunity to infection and the speedier relief of the endometritis.

CONCLUSIONS: 1. In the inflammatory diseases of the uterus and its appendages and in uterine fibroids, antiseptic cataphoresis possesses all the advantages of the usual electric treatment, plus antisepsis not only of the uterine cavity but also of the endometrium itself, and, in uterine fibroids, the possible regressive influence of medicinal remedies on the neoplastic tissues. 2. In these diseases it should displace the applicator, injections, caustics, bougies, and all other forms of intra-uterine treatment, with the rare exception of curettage.

ICE IN THE TREATMENT OF CROUPOUS PNEUMONIA.

BY THOMAS J. MAYS, M.D.,

PROFESSOR OF DISEASES OF THE CHEST IN THE PHILADELPHIA POLYCLINIC, AND VISITING PHYSICIAN TO THE RUSH HOSPITAL FOR CONSUMPTION.

UNDER the title, "Can Croupous Pneumonia be Aborted?" I contributed a paper to THE MEDICAL NEWS of September 24, 1892, in which are given the histories of two cases of pneumonia treated principally with applications of ice to the chest. Since that time I have used the same method of treatment in a number of other cases, with equal success, and have considered the subject of sufficient importance to institute a collective investigation on a small scale by sending 500 circulars of inquiry[1] to as many members of the profession, so as to ascertain whether my experience with ice in this disease has been or may be disproved or confirmed. I have already received a number of responses to my circulars, which I shall prepare for publication in due time; but before doing so, and in order to make my collective report as full and as conclusive as possible, I am anxious to correct, so far as I am able, the false and unreasonble prejudice that exists against the application of cold in pneumonia—a feeling that I shared myself until I gave the plan a trial—and shall herewith communicate a history of one of my recent cases, the treatment of which has just closed, and which, on account of its interesting course and termination, will, I trust, aid in removing this serious obstacle to the more general use of what I conceive to be a most valuable remedy.

R., male, aged forty-five, was admitted to the Polyclinic Hospital on December 15, 1892, with the following history: He was taken ill with a pain in his left side five days previously. On admission his temperature was 102.6°, his pulse was 110, and his respiration 30; the countenance was flushed; he was restless and delirious; the sputum was rusty and bloody; he had a dry, black coated tongue, a pulse intermittent every fourth beat, and the chlorids were absent from his urine. He had been a hard drinker for twenty years. Physical examination showed dulness extending from the apex to the base of the left lung anteriorly, laterally, and posteriorly. The dulness in the upper anterior half of the lung partook of the nature of flatness. The right lung was normal. Anteriorly there was complete suppression of respiratory murmur in the upper half, and crepitation and partial suppression of respiratory murmur in the lower half; posteriorly in the upper half there were a few moist râles, and in the lower half, bronchial breathing.

His whole left chest was enveloped in ice-bags wrapped in dry towels, and ice was applied to his head on the afternoon of the first day of admission. He was ordered $\frac{1}{20}$ of a grain of strychnine every three hours, and $\frac{1}{30}$ of a grain of the same drug hypodermatically morning and evening, ten drops of the tincture of digitalis every four hours, and three ounces of fresh beef-juice alternately with a glass of milk containing a tablespoonful of whiskey every hour.

On the 17th, two days after admission, the intensity of the flatness of the upper half of the lung had markedly diminished, and the respiratory murmur and very moist crepitation were now heard in this area; the crepitation and bronchial breathing in the lower half not materially changed.

[1] I shall be glad to send circulars to any who want or have not received them.

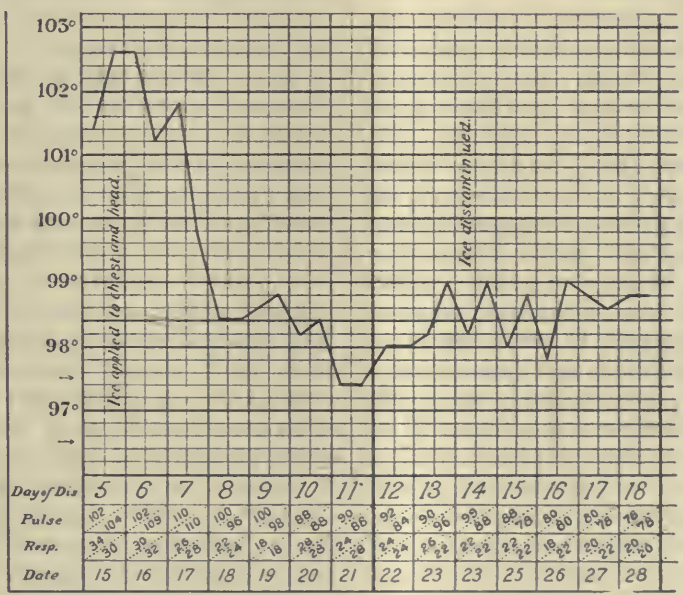
On the 20th dulness had disappeared almost entirely from the lower half, and had diminished very much in the upper half. The last area was now freely permeable to air, and moist crepitant and subcrepitant râles could be heard all over it.

On the 24th the physical signs, except impaired percussion-resonance in the upper half anteriorly, had disappeared, and the ice was discontinued. The digitalis by the mouth, and the strychnine hypodermatically, were also stopped, but $\frac{1}{20}$ of a grain of strychnine by the mouth was kept up three times a day. The beef-juice, milk, and whiskey were continued at longer intervals.

The temperature began to fall on the 16th, the day following the application of the ice, and on the morning of the 18th it was reduced to the normal point, where it practically remained. The sputum continued rusty, bloody, and copious for one week, but the pain and cough subsided soon after the ice was applied. The breathing also became much easier.

On the afternoon of the 18th the low muttering delirium and picking at the bed-clothes, symptoms which were strongly marked in this case, gave way to a most violent attack of delirium tremens. This became so active that it was necessary to strap the man in bed for twenty-four hours, and under the liberal appliance of morphine, potassium bromide, sulfonal, and whiskey the attack was subdued in about forty-eight hours, and after this he made an uninterrupted recovery.

The accompanying chart illustrates the temperature, pulse, and respiration rate of the case.



This case presents several features upon which I shall in conclusion take the liberty of making a few brief comments.

1. *Prognosis.* Without claiming too much it may be said that this was unfavorable. Every-day experience teaches that the alcohol-habit creates a predisposition to pneumonia, and that alcoholism is one of the gravest complications of the latter disease. When this condition is taken in connection with the delirium and the picking at the bedclothes it is quite certain that the prognosis was not reassuring in this case.

2. *The resolving power of the ice on the pneumonic exudation.* It is of course well known that cold has the power of contracting the bloodvessels, and with this view of its action it is clear how ice is capable of dissipating an engorged state of the circulation such as is found in the early stage of pneumonia; but when it resolves an inflamed area which, from the absence of the respiratory murmur and the presence of the flat percussion-note, it is quite certain had passed beyond the stage of engorgement and into that of exudation, we are more or less at a loss to account for the mode of its operation. I must confess that the lateness of the time at which the ice was first applied made me very doubtful whether it would have the least influence on this (upper) portion of the lung, and I therefore relied chiefly on its power to check the extension of the disease in the remainder of this organ. That it had this action was well evidenced two days after it had been used, when moist crepitation and the respiratory murmur appeared, showing clearly that the air vesicles were freeing themselves of exuded material and that air again had access to them.

3. *Influence on the symptoms.* In most of the cases that have come under my observation, the pain, difficult respiration, cough, and expectoration so constantly associated with pneumonia were all notably

relieved in a short time after the ice was applied. This alleviation was very pronounced in the case under consideration. Very often it is this feature of the treatment that makes it acceptable to those patients who yield to it at first under strong protest.

4. *Value of strychnine.* The value of strychnine in the treatment of pneumonia has been well demonstrated by Brunton and others, but its efficacy lies only in the administration of large doses and in its being pushed to the point of its physiologic action. When given in this way it is infinitely better than digitalis—in fact, I think the usefulness of the latter drug in pneumonia is greatly over-estimated, and its supposed benefit is founded on a spurious pathology. By the mouth and hypodermatically this patient received nearly half a grain ($\frac{7}{150}$) of strychnine daily for five days with good results. It is needless to say, however, that if he had not been a chronic alcoholic the physiologic limit of the action of the drug could have been reached by giving smaller doses—say from $\frac{1}{20}$ to $\frac{1}{25}$ of a grain every three or four hours, with an extra daily injection of $\frac{1}{30}$ of a grain.

Details of treatment. Surround the affected area, front, side, and back, with rubber ice-bags well wrapped in towels, continuously. Care must be exercised to prevent the ice-bags from leaking, and from moving away from the chest. Place an ice-bag on the head. Give from $\frac{1}{20}$ to $\frac{1}{25}$ of a grain of strychnine, by the mouth, every three or four hours, and an injection of $\frac{1}{30}$ of a grain of the same drug once a day until its physiologic action becomes apparent in restlessness, which may, perhaps, be first observed in the lower extremities, the reflexes of which are usually enhanced. Give morphine hypodermatically to produce sleep, and three ounces of freshly expressed beef-juice[1] alternately with a glassful of milk with whiskey every two hours. If the stomach is rebellious give the beef-juice, milk, and whiskey by the rectum. A tablespoonful of beef-powder in chocolate or coffee is a most valuable food in these cases when given every three hours. In the convalescent stage I have found the following formula very serviceable:

℞.—Strychninæ sulph. . . . gr. 1½.
Syr. acidi hydriodici } āā f℥ij.—M.
Syr. hypophosph. }
S.—One teaspoonful four times daily.

The Medical Week, the first number of which appeared December 2, 1892, is the name of the English edition of *La Semaine Médicale.* A Spanish edition—*La Semana Médica*—is also published.

[1] The Osborne Beef Press, No. 1 or No. 2, may be used to express the juice of fresh beef.

PLASTER-OF-PARIS IN ORTHOPEDICS.[1]

By A. J. STEELE, M.D.,
of St. Louis;
Professor of Orthopedic Surgery, Missouri Medical College; Orthopedic Surgeon to the Martha Parsons Free Hospital for Children; President of the American Orthopedic Association.

Last year, in my review of the orthopedic work of the late Mr. Thomas, I observed how rarely, if ever, he made use of plaster-of-Paris. I do recall one instance, however. It was when the wire cuirass that he suggests for the treatment of Pott's disease was shaped over a plaster cast of the patient's back. Doubtless, some convenient Italian was called in to do the work. Had Mr. Thomas's armamentarium been enriched with gypsum in its manifold applications, even he might have done better work and obtained still more brilliant results. Nor do those of like limited practice, as was his, realize what a valuable agent is to be found in this article for immobilizing joints, and for retaining parts of the body in improved position after forcible rectification.

The property of rapidly hardening, when once wet, gives to plaster its value. Additionally, it has merit in its cheapness and convenience. It is ever ready, is easily prepared, and simple in its application. Its use renders the surgeon, in many instances, quite independent of the commercial instrument-maker, a consummation devoutly to be wished, for the latter too often assumes the rôle of doctor, both advising and applying the remedy; without anatomic or pathologic knowledge, and too often without judgment, he applies a stereotyped machine, charges generous prices, and consumes for the patient golden moments, when correct treatment, directed by the intelligent surgeon, could have saved a limb or prevented a deformity in a child otherwise doomed to a life-long disfigurement. These proprietors of surgical-instrument shops are as culpable as the class of prescribing druggists. By their illustrated advertisements, and display of showy apparatus in shop-windows and at public fairs, the people are impressed with the idea that to them they should apply for relief. The profession itself merits a share of blame in this matter. Its members having cases of deformity too often very willingly turn them over to the instrument-maker for apparatus, without having any idea of what is best suited. In fact, having pocketed the consultation-fee, they are glad to get rid of cases about which they know but little, and with which they do not care to be troubled. The set appliances which these mercantile surgical-instrument men handle are very like the patent medicines which can be used without the aid of a doctor.

A better day, however, is now rapidly dawning,

[1] Read before the American Orthopedic Association

when the people, as well as the general profession, are beginning to understand that the successful treatment of deformities, in their intricate and chronic peculiarities, requires the intelligent guidance of specially educated and experienced surgeons. The advanced work of this Association, in correctly educating the profession in these matters, is redeeming the poor cripples from the unprincipled hand of charlatan and mere mechanic.

Welcome! say we, to the intelligent and skilled artisan that can fashion the willing steel according to the ideas of the orthopedic surgeon. He becomes our right-hand man—like the pharmacist to the physician, valued when needed. It is, however, always better if the surgeon can do his own work, for he best knows what is required. Thus, the intelligent use of plaster-of-Paris often renders us independent of the machinist. With it we accomplish good results, and cheaply, too—economizing time and the patient's money. With its use there is no interruption of treatment for repair of broken braces, often a serious matter to the country practitioner far removed from the urban instrument-maker.

We, as surgeons, are largely wedded to methods that have been taught us and with which we are most familiar. Thus, a few orthopedists limit themselves to steel bars and leather straps, ignoring the use of plaster because unfamiliar with its manifold virtues. I, however, opine that all those now entering the orthopedic arena will, among other accomplishments, be expert in the use of the plaster bandage.

Those of us who employ this bandage differ in some of the minor details of its preparation. Thus, not a few prefer crinoline into which to rub the plaster, some previously removing its starch by washing. Individually, I prefer the so-called butter-cloth, Holstein brand. It is more open-meshed than the cheese-cloth, and nearly as much so as the crinoline, and its cost is one-half of that of the latter. Bought by the bolt, it may at once be cut into convenient widths at the bookbinder's, or in twenty-yard folds with a sharp cobbler's knife, on a cutting-board, against a steel straight-edge, or square. Three-inch and four-inch strips are none too wide for application to the trunk; they may be narrower for the limbs, and still more so for infant feet. These strips are cut in desirable lengths; here, again, longer for the trunk and shorter for the limbs. This can be done as each individual strip is being sprinkled with fresh dental plaster, which is most economically purchased by the half-barrel, and is also to be had in two-gallon covered tin buckets.

For preparing the bandage we may use any one of the ingenious plaster-bandage rollers found in the shops. But, if we do, we will probably return to the hand for sprinkling, rubbing, pressing, and loosely rolling the strip. This is best done on the table-top, entirely covered with a piece of stout wrapping-paper, which is afterward gathered up, and the loose plaster shaken into the large tin-bucket plaster-holder, then folded and put away for future use. With proper care no scattering of plaster need occur. For the same purpose, also, Doctor Weigel has devised a board with slightly raised sides, a box filled with plaster being attached to one end, through which the bandage passes while being rolled off the board with the hand.

The rollers are put away into a tight tin can, and kept in a dry place until needed. When required for use they are soaked in warm water. As my own are tightly rolled, I keep three or four soaking during the application, always placing the last one in the water farthest removed from the hand, that they may be taken out in the order of their placing. A pinch of salt previously dissolved in the water hastens hardening when desirable, but increases the brittleness. I rarely employ it except when making moulds.

In applying the bandage, much tension should not ordinarily be used, as some unevenness thereby results, with consequent discomfort to the patient. Each round is made to overlap its predecessor one-half its width, and is rubbed smooth. Reverses are rarely required. The plaster is not applied directly to the skin—a shirt, a stocking, a flannel, or sheet-cotton bandage being interposed. A few moments suffice for hardening, when, as a result of the application, we have a firm, fixed dressing. Should it be desirable to remove it at once, a pencil-mark is made in the line of proposed separation, and with an ordinary pocket-knife a V-shaped groove is cut the whole length of the splint. By inserting the index-finger of the left hand under one end of the splint, the plaster, with the lining, can be completely divided without touching the skin; or a corset-steel may be passed under, next the skin, and cut down upon; or, preferably, an instrument such as I have devised may be used. This consists of a small steel plate, half an inch wide and two inches long, fixed on its flat upper surface to a handle. This surface is plated with zinc, so that the knife-blade may not be dulled as it cuts down upon it.

The plaster splint having been cut nearly through by a gutter-shaped incision, V-like, the flat blade of of the instrument is slipped under the plaster next to the skin, and is cut down upon with a sharp knife, and slowly advanced until the whole is divided.

A freshly-applied splint cuts readily, whereas an old splint may be so hard as to require softening. For the latter purpose nitro-hydrochloric acid was

formerly advised, but it is unnecessarily strong, and might burn the patient's skin. I find vinegar, ever at hand, sufficiently strong to soften the plaster, which may be freely scratched with a knife-blade in the line of proposed incision, and the vinegar plentifully dropped on with a pipette. Very soon

Fig. 1.

Skin protector; used in cutting off plaster splints.

the plaster is sufficiently soft to be cut. Various shears and saws have been devised for dividing the plaster. One form of the latter, suggested by Dr. Meisenbach, consists of two equal-sized saw-blades, shaped like the Hey's saw, three-eighths of an inch apart, and parallel, and attached to a strong handle.

In use it not only divides the plaster, but removes a strip, three-eighths of an inch wide, so desirable when the splint is to be reapplied, that it shall be tighter. Both plaster splints upon the limbs and plaster jackets upon the body become loose and fit less snugly after being worn awhile, from atrophy of the soft parts. One of the blades of this saw can be removed by loosening the thumb-screw, shown at the side, and thus be used to make a single cut. It is unnecessary to soften the plaster when a saw is used.

For dividing splints, however, I prefer a sharp pocket-knife, a little vinegar, and my skin-protector. Some fancy a hooked knife-blade shaped like a gardener's pruning-knife, but this cuts only on the point and is likely to wound the skin.

Fixed splints that have been made removable by cutting may be bound on the edges and fastened with hooks or buckles, or with an ordinary roller, and thus taken off and replaced at pleasure.

The plaster bandage is not only useful for making splints, but also for taking moulds of any part of the body. The part being covered with some light, snug-fitting stuff, the wet bandage, well soaked, is applied loosely, without tension, as otherwise ridges will be made and unevenness result. The bandage is allowed, so to speak, to adapt itself, and is smoothed down with the hands and gently forced into any depressions. Less plaster is used than in the case of a permanent dressing. In a few moments this incasing splint is sufficiently hardened to be cut off in a manner already suggested; the shirt, stocking, or whatever was used to cover the skin being removed with it and becoming its lining. The more sleazy this material the better, for it adheres the more closely to the inner surface of the mould. While I so advise, yet it is not absolutely necessary that any material should cover the skin, for the plaster bandage may be applied directly to the part if previously well soaped or greased; but in this case so fine a surface is not given to the resulting cast.

After removal, the cut edges are nicely adapted and the mould is wound around with twine. So rapidly does the plaster dry that one may proceed directly to make the cast, or the mould may be laid aside for future use.

The line of union of the cut edges is stopped with fluid plaster applied to the outside, and, if it is a body mould that has been made, the lower open end is placed on a rough board and stopped around on the outside with plaster. Then ordinary commercial plaster, mixed with water in a large earthen bowl to the consistency of cream, is poured into the mould. This is to be repeated as often as is necessary until the mould is full.

If the cast had been made on a smooth surface—a table-top, for instance—the mould would not have

Fig. 2.

Saw, double-bladed or single-bladed, for dividing hard plaster.

adhered, but as the fluid plaster was poured in would have risen up, allowing escape at the bottom. The rough, sawed surface of a pine board affords strong attachment for the plaster, thus precluding such an accident.

If a cast of the trunk is being made, plaster can be economized and the cast made lighter by forcing down into the center of the fluid plaster round tin cans. Casts of limbs are made solid, and are strengthened by bundles of wire or several iron rods passed through them lengthwise. One end—the lower—is closed by tying over it rubber or other cloth previously to pouring in the plaster. In half an hour or more the plaster will have set sufficiently to allow removal of the outside mould. A sudden force readily separates the cast from the board. The plaster that was used for stopping the line of junction is now chipped away, and the mould, with its lining, is easily peeled off, leaving the cast intact. There is rarely trouble because of the plaster of the cast adhering to the inside of the mould. Did one fear such a contingency, smearing the inside of the mould with lard previously to filling would prevent it. The cast requires pointing up, and if desirable, may be reshaped, adding here and taking off there; this is best done at once, while the plaster is still moist and comparatively soft. The thin and sharp blade of an old case-knife answers as a tool, though other instruments made especially for the purpose can be found in the shops, and are convenient.

Casts made as thus detailed answer all purposes except when great hardness and toughness are required—when, *e.g.*, they may be subject to the blows of a hammer as in shaping the wood and glue jackets. In such case finely picked tow is thoroughly incorporated into the fluid plaster, and the inside of the mould (probably of the trunk) is smeared all around with it to the thickness of three inches, more or less. On removing the outside casing or mould there remains a light but very tough cast.

Casts are desirable either for preserving the form of a distorted part or to furnish a basis over which to shape splints. There is scarcely a deformity that cannot be well taken in this simple manner, and I cannot too strongly urge the importance of obtaining and keeping casts of our deformed cases, especially the rare ones. They have a place in the history of the cases and are valuable for illustration and instruction. None should be deterred from attempting to make them; the process is so simple and rapid that anyone may soon become an expert, whether the cast is made as above detailed or after the older methods of pouring fluid plaster directly upon the skin, previously well oiled or soaped.

Dr. Whitman, in making a cast of the foot, the toes excepted, suggests that thickly mixed plaster be poured upon a square of cotton cloth, and the outside of the foot be allowed to sink into it; the edges of the cloth are then raised until more than one half of the foot is covered; when this is hard, vaselin is spread on its upper surface, and the exposed portion of the foot covered with more plaster. When hard, the two halves are taken off, bandaged together, and the interior, previously oiled, filled with fluid plaster. The outer shell being removed, a cast is obtained of the foot.

A few words may be added as to the employment of the plaster bandage in various affections and in different regions of the body. Gypsum had been recommended by Mathiesen of Holland as early as 1852, as a convenient material with which to treat fractures, but the plaster bandage was first employed for the relief of a deformity in 1875, the affection being Pott's disease; and it still holds its place as an economical and efficient support to the body in spondylitis, especially of the lumbar and of the lower and mid-dorsal regions. The novitiate in its use finds trouble in the ulceration or excoriation of the skin that often occurs over the boss; to prevent the undue pressure and friction that cause this, I cut an oblong opening in a sufficiently thick piece of boiler felt, and place it over the projecting spinous processes, care being taken that it does not shift as the bandage is drawn around and over it. Boiler felt also makes efficient pads for the hip-bones in adult patients. Usually the plaster jacket is made to extend above not higher than the axillæ; but if the disease is in the cervical or upper dorsal region, more thorough support can be obtained by carrying the bandage above the shoulders, like a vest. I cannot say whether or not I was the first to adopt this plan, now some twelve years since, but certainly support for three or four additional vertebræ can thus be had; and with the disease in the cervical region the bandage has been carried still higher, up the back of the neck and around the head. To additionally strengthen the jacket I fortify it with strips of galvanized-wire gauze, the size and strength of the strips depending upon the age of the patient; the corners are cut off and the edges bound with sticking-plaster. The plaster is better incorporated with the gauze than with perforated tin.

In lateral curvature a plaster jacket or corset gives support and comfort, but is not used as a corrective of the deformity.

The use of the plaster bandage has, within the past dozen years, almost revolutionized the treatment of club-foot. Through its aid we now do at one sitting what formerly required many weeks. Under an anesthetic the foot is at once straightened, with or without tenotomy (according to the age of the patient), and so held by the plaster, a sheet-cotton roller having been previously applied to the part.

Here again I find valuable aid in a strip of wire gauze: a layer of plaster bandage having been placed over the foot and leg, one end of a narrow gauze strip is carried around the foot, and while it is forcibly held in corrective position, the other end of the strip is carried well up the outside of the leg and there fixed with additional rolls of the bandage.

In hip-disease, the joint may be quite efficiently immobilized by a plaster bandage carried well up on to the trunk and down to the lower third of the leg. This is a ready method for the country practitioner far removed from the instrument-maker, or when economy is necessary. This bandage, however, finds more suitable adoption in the immobilization of the knee-joint. The limb being covered with a long stocking or drawer leg, and the articulation surrounded by cotton, the plaster is carried well up on the thigh and down upon the leg, and fortified with metal gauze strips on the sides, thus affording a cheap and efficient splint. If, however, the patient is much on his feet, the splint tends to drop—to become displaced downward. This may be prevented by giving it support through a steel arm extending to the sole of the shoe, or it may be suspended by straps from the opposite shoulder. I have also to good purpose used a piece of adhesive plaster for fixing the splint to the skin of the leg at the time of application.

In disease and sprains of the ankle-joint, plaster finds frequent and admirable application, care being taken that the foot is put up at a right angle—not extended.

The gypsum bandage is applied to the elbow-joint and the wrist-joint for immobilization, meeting well the indications. Care is exercised here, as whereever the plaster bandage is applied, that it is not wound around the part so tightly as to produce undue constriction and interference of the circulation, with consequent sloughing. The appearance of the part beyond the bandage, as of the fingers or the toes, will indicate danger by coldness, swelling, and discoloration, in which event the plaster should at once be cut off. A case of malpractice is now pending in our courts in which a doctor applied a plaster dressing to a boy's arm for a fracture extending into the elbow-joint, and extensive sloughing of the tissues of the forearm followed.

In both in-knee and out-knee, and in tibial curves after forcible manual correction or after osteotomy, the plaster splint holds the limb in the desired position until union takes place in the second case or accommodative changes have fulfilled the indications in the first. In manual correction of genu varum or valgum I change the splint every three or four weeks. In wry-neck, after myotomy and subsequent rectification, the bandage from a body-jacket is continued up the back of the neck and around the head, thus firmly holding the parts in the corrected position.

Having subcutaneously tapped a ganglion and scarified the interior of the sac with a spear-pointed instrument, like a couching-needle, and effectually expressed the contents, I apply a firm pad, and put up the wrist in a flexed position, with a plaster bandage extending down the forearm and including the hand. Obliteration of the ganglion universally follows.

I might multiply the instances in which the gypsum bandage finds admirable and convenient application, but will rest with the suggestion, that as one becomes more expert in its use, the more often he will find occasion for it.

ORIGINAL ADDRESS.

VALEDICTORY ADDRESS.[1]

BY ALFRED L. LOOMIS, M.D., LL.D.,
OF NEW YORK.

Fellows of the New York Academy of Medicine: Before I pass to my distinguished successor the insignia of office with which you honored me four years ago, it seems fitting that I should review in brief the work of these years, that we may the better appreciate the rapidly increasing breadth of our fellowship, and recognize that privilege and obligation are twin sisters in their growth.

The story told in dates and figures alone might be cold and formal, but the ratio between 640 and 270 bristles with interest when each unit means a Fellow and we recognize that the new members received in four years equal more than 33 per cent. of our entire membership so short a time ago. And interest passes to pride, when among the new faces we see so many of the older members of the profession whose honorable positions and intellectual work have brought us both strength and renown. Nor is our pride without hope for the future. Among the younger members who now share our fellowship are found many of the most active workers in the profession, not a few of whom have already gained honorable distinction for work done. Every line of our growth is marked by equally eloquent figures. The 7000 new volumes and the 2000 new pamphlets which already crowd our present shelves to overflowing, and have raised the catalogue of our library to 27,000 volumes and 8500 pamphlets, represent but a slightly lower per cent. of increase. The breadth of privilege which these figures indicate cannot be made more clear, nor is it possible to obscure the twin, obligation. Men and books are valuable only when combined with mental processes. How faithfully we have met this obligation is shown in the fact that the number availing themselves of the privilege of our library has increased in three years 350 per cent., while men and means have increased one-third. The work done in our library has increased three and one-third times. These figures gladden our hearts, for they indicate that our fellowship is

[1] Delivered before the New York Academy of Medicine, Jan. 19, 1893.

doing ten times more brain-work than it did four years ago, its intellectual status is being elevated, and a deeper enthusiasm and stronger purpose is giving more certain relief and comfort to suffering humanity.

It may not be uninteresting to recall the more material side of our history in these harvest years.

In 1888 we held a clear title to the Academy building in Thirty-first Street, which was valued at $60,000, and our building fund had reached $96,000. Under the stimulus of Dr. Jacobi's enthusiasm there had been many discussions in both Academy and council regarding the immediate necessity of a new Academy building, which finally crystallized at the regular meeting of October 18, 1888, into the unanimous passage of the resolution "that in the opinion of the Academy it is now expedient to take active steps toward the purchase of a site and the erection of a new Academy building." The trustees and council were instructed to carry out the intents of this resolution. Owing to unexpected complications it was not until March 7, 1889 that the council reported to the Academy the execution of a contract for the purchase of a site on West Forty-third Street, at a cost of $90,000. Formal authority to draw upon such funds of the Academy as could be legally used for that purpose was conferred upon the trustees by vote of the Academy at the meeting of April 14, 1889, when a special building committee, composed of Drs. Jacobi, Herrick, Peters, Castle, and Loomis, was appointed and intrusted with all matters of detail. Two months were spent in consideration of plans and designs, and on June 4, 1889, the Academy accepted unanimously those of Mr. Robertson, which the building committee had submitted as having their approval, and authorized the committee to make contracts for the erection of a building in accordance with these plans, and under the supervision of Mr. Robertson, as architect. These instructions were obeyed with the least possible delay, and on October 2, 1889, less than one year from the date when the Academy assumed a definite position on this question, the corner-stone of this building was laid with appropriate ceremonies. At the end of another year your building committee formerly transferred this completed building to the board of trustees.

The anniversary meeting of November 20, 1890, was made memorable by the dedication of the most complete and appropriate building of its kind in the country, and the formal opening of its library to the profession and the public. It was an occasion which will be long remembered, not alone by those present, but by all who appreciate the full significance of the event; when distinguished members of our profession from neighboring cities, and eminent citizens of our own city, who had given generous proofs of their sympathy, united in celebrating the consummation of our long-cherished hopes.

Never was there more beautiful illustration of the truth that, to earnest men, the end is but a new beginning, than in the spirit of all that was said or done on that occasion. Our anniversary orator looked backward only to see in the zeal which had attended our growth from the first, the promise that our Academy was to go forward in the future to enlarge in generous measure her chosen work, and consummate her functions, sustained by a common impulse among her Fellows to work for work's sake.

That eloquent champion of our library, your honored ex-President, Dr. Jacobi, saw in this building no home for lotus-eaters, but the visible vestibule for a new epoch in medical learning and achievement. His strong words found faithful echo in the trembling accents of our honored, our beloved Barker. With the dawn of another life already tingeing his horizon, his prophetic promise to this Academy of a new era, so full of grander things, that none would venture to cast a horoscope of its future, was spoken in tones that almost made real the spirit of "Now, Lord, lettest Thou thy servant depart in peace," nor were such conceptions distorted images of blind affection.

In the communication sent us by our noble and generous friend, D. Willis James, were these words, which should be repeated to every large-hearted citizen of New York: "Look at the magnificent work the medical profession has done and is doing. Remembering all they have accomplished for suffering humanity, let us, as citizens of New York, see to it that in our midst the means are ample and promptly supplied for the most scientific research in all departments of learning, but especially in medical science."

That full appreciation of our profession is too often lacking when most expected, must be confessed with sorrow, for Weir Mitchell told us that although the medical guild possessed a high code of morals, which was old before Christianity was born, a code based on honor, loving brotherhood, and the largest charity, even when made practical in self-sacrifice, it has never been fully appreciated even by the recipients, else would they be more eagerly generous in their assistance in building halls and furnishing libraries.

The old but ever new spirit of our profession, which has borne it onward and upward, regardless of rewards, was most beautifully portrayed by our loved and honored brother, Oliver Wendell Holmes, who wrote in his greeting for that night: "An academy which fulfils its highest function is a true working body. It deals with loving subjects. It handles unsettled questions. It sets tasks for its members and furnishes, so far as it can, the appliances required for their accomplishment. It offers rewards for meritorious performances, and sits in judgment on the aspirants for distinction. It furnishes the nearest approach we can expect to a fixed standard of excellence by which the work of new hands, and the new work of old hands, can be judged. It is a barrier, a breakwater, against the rush of false pretensions which are constantly attempting to find their way into public confidence. Academies have been too often thought of as places of honorable retirement and dignity and ease, nooks where emeritus professors and effete men of letters, once cocks of the walk, could sit in quiet roosts while the fighting, the clucking, and the crowing were going on beneath them."

With such words of cheer and sympathy, of promise and prophecy, of warning and advice, amid the gracious smiles of approving friends, this building was dedicated a little more than two years ago. Experience has shown it in every way suited to our wants and work, and from the day of its dedication until now, not only has prosperity attended us, but a broader and more tolerant spirit has been developed in our membership. The links which bind together the

senior and junior members of our fellowship have grown stronger; jealousies and intolerance have given place to liberality and kindness, and the Academy has become the center of the best thought and the best spirit of the entire profession. The young enthusiast and the aged conservative are crossing swords with that spirit of modest recognition of truth in which one scientific worker is always willing to meet his fellow. We are to-day exerting a greater influence on public thought and action than ever before. We are being more and more appealed to in the legislative and economic work of the Commonwealth. The public health and safety of our citizens are being more and more committed to our hands. Last summer, when our city was threatened by the invasion of a pestilence, the whole community looked to us for protection, and through the governing body of our nation's commerce, appealed to us for advice and guidance. Do you realize, gentlemen how large a feeling of safety comes to the public on account of the presence of the Academy in the midst of our city? Let us act wisely and unselfishly in all matters pertaining to the public good.

In our first appeal made to the profession and public to erect a new and more commodious Academy building, it was stated that our most pressing need was a suitable place for our library.

Expressive as they are, the figures which I have given you of the library are but lifeless proofs of the eloquent words spoken by Dr. Jacobi at the laying of the corner-stone, and with increased fervor at the opening of this building—prophecies which are rapidly being fulfilled. The real influence of our library is in the intellectual development of our fellowship, which cannot be measured by figures, but must show itself in the more exhaustive and accurate work done by our members.

But it must be remembered that the cessation of growth is the beginning of regeneration. If we are to go forward, our library must not fall behind. Its endowment fund is now only $25,000. It should be increased at once to $100,000; with no less a sum can we keep pace with the present tropical growth of medical science. That some of the large-minded men with ample means will soon discover their privilege is no longer a matter of hope but of certainty, for money in no other place can exert such a constantly widening influence for good, as the increase in our library endowment fund to the sum of $100,000.

There are not a few in our midst to whom the entire sum seems small, and I would say to those who would share this honor and receive a monument of gratitude, more enduring than marble: Do not delay lest the opportunity be lost. The bronze in yonder tablet was bought for a few dollars, and on its face it simply says, "This man built a hall;" but let me say to those who hear or read these words that this man's name will fall from reverent lips in tones of love and honor when all marble piles are ground to dust.

With our library fund raised to what it must be, our strength would be complete, for all the departments of medicine and surgery are now represented in our sections, so that every Fellow can find a place among congenial workers for making known the results of his study under the sifting but kindly criticism of experts.

The plan by which the general meetings of the Academy each month are placed in charge of the sections in rotation, thus presenting to the Academy the special work being done in them, has not only added interest to the Academy meetings, but has developed a spirit of generous emulation under which all the work has become more systematic; and sections that four years ago were indifferently attended, doing desultory work, have now become active and efficient parts of our organization. The fear that increase in the number of sections would diminish interest in the general meetings has proved groundless, for the attendance at both the Academy and the section meetings has increased rather than decreased.

These evidences of a broader and a deeper scientific spirit doubtless give promise of better things to come; when we appreciate that no hampering debts can distract us from our higher purpose, we enter upon our future not only free from debt, but full owners of a building worth $380,000, with furnishings representing $30,000, a growing library valued at $80,000, and invested funds over and above the $10,000 bonds still uncancelled, to the amount of $32,000, making a total of more than half a million. With such a financial status and such a fellowship, the question comes to us to-night—What is the mission of the New York Academy of Medicine?

At the laying of the corner-stone of this building Mr. Cleveland said that "The nobility and sacred character of this mission will never lose its interest, while humanity is touched with human woe; while self-sacrifice receives the homage of Christian hearts; while the suffering and sorrows of our fellow-men start the tears of pity; nor while their alleviation brings comfort and satisfaction to the soul of sympathy." This broad and clear conception of our mission is from a layman's standpoint, but represents work done, not doing. For us the question is one of ways and means, of obligations that are individual and collective. To the individual Fellow we offer opportunities and means for a richer intellectual development and social culture, and justly demand that he use them for his own and our common good. No Fellow has a right to ignore this obligation of fellowship, for the Academy stands before the public for what its individual Fellows may be. For us, obligations and rewards are reciprocal. Whoever shares in honors won by others is bound to make return to the best of his ability.

To everyone the first duty is a recognized connection with one or more of our sections, a connection which imposes the obligation to attend its meetings when possible, to pursue studies and investigations that shall be worthy the attention of the section, to give encouragement and support to fellow-members by serious and earnest consideration of the subjects they may present.

As an organized body we have no more imperative duty, or one requiring greater wisdom, patience, perseverance, and courage, than in organizing and harmonizing medical work. It is worse than folly to shut our eyes to the fact that so large a per cent. of medical work is done to fill time as well as space, as to become a matter of jest and sarcasm even among ourselves. It is worse than cowardice to confess the impossibility of doing enough good work to satisfy the demands of all

our societies, and then make no effort to correct the wrong.

If I may still be permitted to offer one word of advice from this presidential chair, it would be this: That the foremost duty of this Academy to-day, and the one offering in its completion the largest and most valuable returns to us and the profession, is the consolidation and concentration of the medical societies of this city. I do not say this because the many other societies are not doing good work—many of them are doing some of the best that is done—but I do say it because they and we are doing some bad work, because we need their good work as they need ours, and neither needs bad work. In these statements I do not, of course, include the County Society. It occupies a unique position, accomplishes results that we could not accomplish, and possesses functions that cannot be delegated. It and the Academy are complementary bodies. With this exception, then, I am convinced that consolidation of the many small societies with the Academy would be productive of the greatest good to all concerned; that it would do more to conserve energies, to eliminate work that, in being bad, is injurious as well as valueless; to establish higher ideals; to return more generous rewards for work done; and finally, to develop a stronger spirit of common brotherhood than any step which has been taken by the profession. I am unable to see any valid objections to such a union, unless a chartered society holds property accepted under specific restrictions.

The predominance of the social element, which has been advanced as an objection, appears to me a most cogent reason for taking such a step. The introduction of the social element into the regular monthly meetings of the Academy during the past two years, which was made possible by the liberality of some of our Fellows, has demonstrated that the value of the scientific work is enhanced rather than lessened, the discussion of the evening being frequently continued in the groups gathered about the tables. There can certainly be no objection to the addition of the social element, even to the section meetings, whenever the members desire it, and thus fulfil all the claims of the social medical societies.

I cannot leave this chair of office without a word of tribute to the Fellows whom death has taken from us during the past four years; among them are three to whom this Academy will always owe a special debt of gratitude and respect—Du Bois, Barker, Leaming—names which we cannot follow with the hackneyed phrase, "We mourn their loss." As men and friends, the parting brought to each of us in varying measure the aching heart and weary sense of hopeless loss. But to this Academy they can never be lost. The story of their loyalty and devotion, their watchful care and self-sacrifice, their wise counsels and liberal support must continue to exert an influence on every Fellow who values an honorable name. We can pay them no loftier tribute of respect and appreciation than to say, "We do not miss them," for that is the test of a rounded life. We restore the borrowed garments to the earth from whence they came, and call them the man. Why do we thus deceive ourselves? That faithful canvas shows but the house where Barker tarried for a time. Those hands with woman's tender touch were only tools which did his bidding, and when the recreant voice gave halting service and laggard obedience, who thought to say his wit has dulled, his learning failed, his foresight dimmed, his counsel erred, his love grown cold!

These men did all that man can do. They did their part in life with faithful zeal until their powers gave way; and with that wisdom which never dwells in sordid minds, they died, not to leave their mental wealth for legacies, but day by day transferred it to men with fresher strength, and so gave over, not gave up their work, content in the knowledge that it was not to cease, but grow larger year by year; and when at last their summons came, the best of all they had, the essence of the man, his quality, they left with us.

Why is it that we will not see the truth within this mystery of death? We whine in greedy selfishness: "No man will miss me when I die," and will not see the reason that stares us in the face—the useless man receives his share of being missed when living, and cannot ask for more. The man whose worth is sterling cannot be missed; the force that is the man goes on. As we turn our faces to the front, then, let us not forget these present, if unseen, Fellows; but, made stronger in their influence, let us press forward with unfaltering courage and determination to make and share such measure of worth, that we too shall not be missed.

Fellows of the Academy: Four years ago, when you honored me with the presidency of this Academy, I entered upon the duties of the office with a feeling of self-distrust. Two years ago, when you unanimously elected me to a second term, I felt grateful for the renewed expression of your confidence; but when a Fellow at the close of this term nominated me for a third term, a feeling of pride came to me, for no greater honor could have been conferred upon me. In declining the nomination, I realized that the time had come when the interests of the Academy would be best served by new energies stimulated by a fresh enthusiasm. For all your patient courtesy, and the many evidences of respect and confidence shown me during these years, I give you my grateful thanks, with the feeling that another and the most beautiful chapter of life's labor and waiting is ended.

CLINICAL MEMORANDA.

HERNIA OF THE PLACENTA THROUGH THE MUSCULAR COAT OF THE UTERUS DURING LABOR.

BY J. G. LYNDS, M.D.,
DEMONSTRATOR OF OBSTETRICS AND GYNECOLOGY IN THE UNIVERSITY OF MICHIGAN, ANN ARBOR.

MRS. B., thirty-eight years old, a primipara, called me to attend her on October 9th at 5 A.M. On examination I found an enormously distended bladder, upon evacuating which the pains ceased.

About 6 P.M. I was again called, when I found the patient having strong regular pains, and the os beginning to dilate, everything appearing normal.

On making an examination a couple of hours later, I found an enlargement on her left side at the junction of the upper with the middle third of the uterus. It would almost disappear when there was no uterine contraction, but became larger and larger with each succeeding pain.

After watching it for some time I came to the conclusion that it was a fibroid undergoing abdominal evolution, and becoming subperitoneal; and informed the husband and nurse to that effect.

When the head was about half-way through the bony canal it ceased to descend farther, but the tumor became rapidly larger. Fearing some serious complication I applied the forceps and delivered without any great difficulty. I was surprised that there was no hemorrhage at all. After waiting fifteen or twenty minutes I proceeded to deliver the placenta, first trying expression; this proving unsuccessful, I introduced my finger and followed up the cord as far as I could reach, but failed to find its attachment to the placenta. Introducing my hand, I found that the cord passed through an opening on the left side of the uterus at about the junction of the upper with the middle third of the organ. With difficulty I insinuated a finger and found the attachment of the cord. The opening was very small, only permitting the admission of one finger beside the cord. Thoroughly anesthetizing the patient, I dilated the opening and endeavored to remove the placenta, but found it very firmly attached—so much so that it tore in many pieces in the process of separation. Finally I succeeded in getting it all away and emptying the uterus, the walls of which were very thin. As the organ soon filled up with blood-clots and became about as large as before the placenta was removed, I again thoroughly emptied it, and by bimanual pressure kept it contracted until hemorrhage had ceased. The patient made a very fair recovery. She had some slight symptoms of peritonitis, but nothing of a serious nature. The cause of this odd occurrence must have been a peculiar arrangement of the muscle-fibers, in consequence of which they drew apart at this particular place, leaving an opening through which the placenta escaped, pushing before it the mucous membrane.

A CASE OF HOMATROPINE SUSCEPTIBILITY.

BY GEORGE M. GOULD, A.M., M.D.,
OF PHILADELPHIA.

I LATELY had a patient, a lady, thirty years of age, who showed an extreme idiosyncrasy as regards homatropine. For purposes of mydriasis I dropped into each conjunctival sac a tiny drop of a solution (Merck's manufacture), gr. viij ad ℥j, four times at intervals of from five to ten minutes. I habitually instil only a portion of a full-sized drop, by extruding this amount at the end of the dropper and lightly touching the conjunctiva with it. The entire eight droplets would consequently not equal more than one or two of the usual size. In consideration of this fact, and also deducting the amount wiped away with tears or otherwise not absorbed, the total quantity of the drug absorbed must have been infinitesimally small. The following morning the patient's lids were swollen almost shut, and the cheeks for two inches below the eyes were puffy and highly discolored; the skin of the back, chest, arms, and legs was erythematous, and there was general prickly heat with great itching. The effects passed off in twenty-four hours. The patient informed me that similar symptoms had several times resulted from the use of belladonna plasters.

If we liberally suppose that two full drops of the solution were absorbed, it follows that about one-thirtieth of a grain of homatropine produced the effects described.

MEDICAL PROGRESS.

The Prognosis of Actinomycosis.—SCHLANGE (*Archiv f. klin. Chirurgie*, xliv, 4, p. 863) concludes an analysis of sixty cases of actinomycosis of various organs and structures by formulating the prognosis. When the disease involves the head and neck, except in the few cases in which the base of the skull is invaded, the course is favorable, recovery taking place in from a few to nine months; it is exceptional for a fistula to persist or to have formed anew after the lapse of a year. Pulmonary actinomycosis, heretofore considered necessarily fatal, may terminate in recovery. The prognosis of intestinal actinomycosis is the more favorable as the anterior abdominal wall is involved and the retro-peritoneal structures escape. Retro-peritoneal extension of the disease renders unfavorable the local conditions facilitating the expulsion of the fungus; death usually results from amyloid degeneration and wasting. If actinomycosis present pyemic manifestations a fatal termination is to be expected, as a number of vital organs are likely to be involved. Actinomycosis may pursue a chronic course, continuing for thirteen years or longer, if functionally important organs be not involved, as when the process confines itself to the connective tissue about the spinal column.

Changes in the Fields of Vision in Cases of Traumatic Neuroses.—PLACZEK (*Berliner klin. Wochenschr.*, Nos. 35 and 36, 1892) has reported seven cases of traumatic neuroses, in each of which he found certain changes in the fields of vision that have been described as characteristic. The range of vision was greater as the test-object was moved from the periphery of the perimeter to the center than when moved in the opposite direction. It was also found that concentric limitation of the field of vision was characteristic of the traumatic neuroses, though the symptom could not be developed in all cases.

Mercurial Intoxication.—At a recent meeting of the Royal Society of Physicians, of Vienna, PROF. ALBERT (*Internationale klin. Rundschau*, No. 50, 1892, p. 2043) reported that mercurial intoxication had developed in himself as the result of the frequent use of corrosive sublimate in surgical practice. A considerable quantity of mercury was obtained from the urine of twenty-four hours. The intoxication had manifested itself especially in the form of dyspeptic symptoms; the nails had become softer and tougher, and three sound teeth had fallen out.

The Association of Posterior Spinal Sclerosis and General Paresis.—At a meeting of the Société Médicale des Hôpitaux, RAYMOND (*La Médecine Moderne*, 1892, No. 51, p. 774) reported having found, after death, in the case of a man who had at first presented the symptoms of posterior spinal sclerosis, and subsequently in addition those of general paresis, besides the classical systemic lesions of the posterior columns, meningo-encephalitis.

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

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SATURDAY, JANUARY 21, 1893.

THE SENATE QUARANTINE BILL.

THE quarantine bill passed by the United States Senate is an important protective measure which confers great powers upon the U. S. Marine-Hospital Service, as well as upon the Chief Executive of the Nation. While it does not place quarantine administration absolutely and exclusively in the hands of the National authorities, it virtually has that effect; for it is expressly stated that when at such ports and places within the United States where quarantine regulations exist under the authority of the State or municipality, these regulations are not deemed sufficient in the opinion of the Secretary of the Treasury to prevent the introduction of contagious or infectious diseases into the United States, the Secretary of the Treasury is authorized to make additional rules and regulations to be enforced by the sanitary authorities of the States and municipalities. If the State or municipal authorities fail or refuse to enforce them, the President shall execute and enforce them through officers appointed for the purpose. In other words, quarantine rules and regulations must conform to a National standard, and their execution and enforcement, whether by National or local authorities, are placed under National control.

There is no mistaking the object of the bill as being the ultimate assumption by the National Government of absolute control of quarantine affairs. It is, however, a tentative measure which has merit in avoiding a too sudden change in administration. As a compromise between opposing views, it also avoids antagonism and a revulsion of feeling which a more radical measure might provoke. The main object—the National supervision of quarantine—is secure, and the effects of the law cannot be otherwise than beneficial.

A uniform quarantine service is a want generally felt and acknowledged. And now is the opportunity for supplying this want. It is a question of National concern, and it is therefore right and proper that the Government should assume the duty and exercise the right to legislate upon the subject.

Another very important feature of the bill is that which gives the President the right to prohibit, in whole or in part, the introduction of persons and property from countries or places where cholera or other infectious or contagious diseases exist. The suspension of immigration, under the circumstances mentioned, will go far to diminish the danger of the introduction of contagious and infectious diseases, and greatly strengthen the bill as a protective measure.

The provision of a liberal appropriation is not the least important item in the bill. Parsimonious appropriations to the local quarantine authorities have been largely to blame for the want of proper equipment of the stations and the resulting inefficiency. The U. S. Marine-Hospital Service will, fortunately, not be hampered by this drawback.

It is greatly to be desired that the bill shall pass the House, and that immediate steps be taken to organize the service under its provisions.

HAHNEMANNIAN TENDENCIES AND PRACTICES.

THERE are certain habits of mind and of action that characterize the quack everywhere and at all times, and when the advertisements, claims, and acts of members persistently show that these tendencies are unrebuked by the composite body to which the individuals belong, it cannot be thought an injustice if the epithet of quackery is applied to the entire association. Several suggestive things have of late come to our notice that, so far as we know, have never received a word of criticism or dissent from the better class of the advocates of homeopathy.

The plainest evidence of quackery is the appeal to the public as to the cure of disease. The advertisement in lay journals of ability to cure disease and of superior medical knowledge, is of the very essence of quackery. The great and official homeopathic druggists, BOERICKE & TAFEL, have lately issued a little book, *Safety in Cholera Times*, and from the character of the writing and from the fact of its being advertised in non-medical journals, it is plainly designed for popular dissemination. The appeal direct to popular prejudice and the densest medical ignorance is made most unblushingly and frankly. Here is an advertisement cut from a lay newspaper:

"*The cholera scare is over.* If the public could be brought to realize the safety from the attacks of this disease that there is in Homeopathy, the scare would never occur again. From official reports, covering over a million cases, we learn that the death-rate of the 'regular,' or Allopathic practice in this disease has been (and from present reports is) 54.8 per cent. of the cases treated. The same reports show that the death-rate in cholera under Homeopathic treatment was 8.5 per cent. Under the proper Homeopathic prophylactic treatment, the danger of contracting the disease is almost *nil*. We publish a little book, *Safety in Cholera Times* (50 cents, by mail 54 cents), that gives the treatment of the disease and the preventive treatment. It is worth the money in the peace of mind it affords. BOERICKE & TAFEL, Homeopathic Publishers and Pharmacists, 1011 Arch Street, Philadelphia, Pa."

The "treatment" of the disease repetitively lauded in this unconsciously humorous and crazy book is *Verat.*[30], *Cuprum-metal.*[30], *Carb. v.*[30], and *Camphor*[3]. It matters not that if the patient should eat a bit of toasted bread for breakfast he would thereby take myriads of doses of vegetable carbon which in mystic pellets is guaranteed to cure him. It matters not that the physiologic dose of veratrum or copper is, in this 30th "potentization," diluted as much as if dissolved in a body of water equal in size to 480,769 of our worlds. In the same way, what an insult to popular intelligence is implied in the roaring claim of "cures" of cholera by these or by any means. What fools the Hamburgers were, to be sure!

The use of medical knowledge against the men and the profession that have acquired this knowledge and taught the trickster is another characteristic of the quack. A most excellent surgeon and teacher writes us that for many years it has been the custom of the homeopaths of several States about him to send their sons to his college to acquire the necessary medical knowledge, with no intention that they should subsequently practise scientific medicine. These youngsters, so soon as they get their diplomas, join the ranks of their fathers and at once commence the fight against the "bigoted allopath." Our correspondent says that at a recent convention of homeopaths a number of the most prominent men, as usual, took to raving and fuming over the tyranny of the "old school," its archaic practices and teachings. At the same moment their sons were receiving their entire medical education at a regular or scientific medical college. This throws light on the mental condition of the fellows who "leave the old school," who have "studied both," or who "practise both ways."

This aspect of the affair is indeed but another illustration of the greater fact that not a single truth of medical discovery or progress, not a bacillus, not an instrument of precision or useful method of treatment was ever discovered by a member of this sectarian school. They take the results of the work of other men and use them selfishly, with hatred and abuse of their benefactors. Spongers, all!

A third characteristic of the quack is his disregard as to whether his unscientific fad tallies with the conclusions of other than medical science. There is not a professor of Physics or of Physiology in any institution of learning in Europe or America that would not turn with nausea from the question, if the thirtieth "potentization" of a dose of medicine could *a priori*, or, as a result of tests on animals, have any physiologic power whatever. The assertion is too silly to answer. The same is to be said of the last hommypatic egg, the sacred fiddle-faddle of *similia*. To what scientific pathologist or physiologist is it not the most arrant nonsense? And his nausea would be most active, indeed, if asked as to the lice, the pus, the bugs, and the frightful filth catalogued and to-day on sale by SWAN, the New York homeopathic druggist. TESLA cannot bottle up "blue and yellow rays of the spectrum," but SWAN has them for sale at so much a "graft"—and SWAN is of the purest dye of haloed and hallowed homeopathy.

To choose a final illustration among many other proffered ones, we quote from a recent number of the *British Medical Journal* part of an editorial that at once exemplifies many faces of this protean monster. It is entitled "Electro-Homeopathy, or Hahnemann Harnessed":

"On the principle of elective affinities we are not surprised that a union has been effected between the two 'pathies' which constitute the subject of these remarks. Electropathic and homeopathic systems of treatment are so much akin, both in their origin and direction, that nothing is more natural than to find them in company. 'You air my affinity!' exclaimed the Mormon lady to Artemus Ward, the genial showman, as she flung herself into his arms and protested that the Powers above had decreed their union. Thus to homeopathy comes electropathy, and avows it is her long-lost connection. Mr. Labouchere, in the pages of *Truth*, has told the story of the attachment and the celebration of the marriage of this latest fashionable pair. Mr. Knight represents the institution which in this country has been founded for making known the blessings of a new system of electro-homeopathy. Already the latest of the 'medical sects' (pardon us, shades of the teachers of Alexandria) has its annals and its propaganda; its insignia are a red and blue star, indicative, we presume, of the red and blue electricity with which the soap, the dentifrice and gargle, the lime hair-wash, the velvet powder, and the 'lactescent balsamic bath' are impregnated. No longer is the divinity of electropathy enchained in a belt or a pad, but the liberated goddess diffuses her blessings to mankind by the toilet table and the lavatory. 'Sauter,' says *Truth*, 'appears, as far as I can make out, to have succeeded in bottling up vegetable electricity in homeopathic doses. His remedies, marvellous to relate, will cure all diseases, even those regarded as incurable.' But all this cannot be done without money, and as the poor are to have the blessings of the system without money and without price (we are uncertain whether this includes the soap, the dentifrice, and the lactescent balsamic bath), the charitable are invited to send around the 'snowball,' so that money-orders, checks, and bank-notes may pour into the treasury of the Institute of Electro-Homeopathy, and replenish its funds, which appear at present to amount to £3 4s. 1½d. Thus is Hahnemann harnessed to electricity, and thus has the latest medical discovery blessed the world from without the circle of the orthodox. As Mr. Labouchere has turned the search-light of *Truth* upon the new system, its advantages will probably be completely manifested to such of the public as at present are incredulous."

THE CAUSES AND TREATMENT OF PREMATURE BALDNESS.

SEEGER (*Wiener Klinik*, December, 1892) discusses in a lucid and consecutive manner the influences that lead to the development of premature baldness not dependent upon demonstrable disease or upon the presence of parasites, and describes the therapeutic measures to be adopted in accordance with a knowledge of the anatomy and physiology of the parts.

The fact that baldness is more common in men than in women, and that when it occurs in the latter not the same parts of the head are affected as in the former, at once suggests the thought that the source of difference is to be found in the care and covering of the hair in the two sexes. In males, baldness usually first appears over the frontal bone, centrally or laterally, or over the occipital bone just above the protuberance; while in women the hair is first prematurely lost behind the ears or at the vertex of the head.

Men, as a rule, wear heavy, rigid, impermeable hats, provided with bands that constrict the forehead, so that the normal ventilation of the skin of the scalp is interfered with, while perspiration is stimulated and evaporation prevented, and circulation and innervation are interrupted. The parts, by being kept heated and moist, are softened and rendered unhealthy; the growth of the hair is unduly stimulated, and the result is an imperfect product. Women, on the other hand, wear light, open hats that interfere little or not all with the nutritive conditions and nervous supply of the scalp. Men, too, usually have their hair cut short and are not hardened to exposure of the bare head, while in women the reverse conditions obtain. Short hairs grow faster than, but do not possess as much vitality as, long hairs, nor do they afford the scalp similar protection. When women become bald, some neglect or vice can be found similar to that which accounts for baldness in the male.

Intellectual application contributes to premature baldness only indirectly, by its usual association with neglect of proper physical exercise and regularity in the mode of life. Emotion, anxiety, grief, fright, excessive indulgence in alcohol and tobacco, and certain reflex influences may induce baldness. A powerful predisposing factor to the occurrence of premature loss of hair is heredity.

The treatment of the form of baldness here under consideration naturally suggests itself. In the first place, in a prophylactic way, the headgear is to be as light as possible; it should be provided with openings for the purpose of ventilation, to facilitate the evaporation and escape of the perspiration; by the use of a convoluted band the pressure upon the head can be graduated and distributed; and by wearing the hat back upon the head rather than down over the eyes the pressure will also be reduced to a minimum. In the summer a sun-shade should be used, but the hat should be especially light and airy. The hair should not be cut off too short. It is a common belief that frequent cutting will prevent the development of baldness; but this is a fallacy. The hair should be carefully combed and brushed.

Soap and water will rarely be required. Artificial oils rubbed in by means of the hands are to be avoided when the hair is short. The hair should, under proper circumstances, be exposed as much as possible to facilitate evaporation and to diminish the sensitiveness of the part. In the summer it is well to expose the head morning and evening to the sun.

When baldness threatens or has already set in, the hair should several times daily be systematically brushed radially in all directions from the summit. The occipito-frontal muscle should be exercised also several times in the course of the day. Frictional electricity, by means of a gutta-percha plate (with an insulated handle) rubbed upon a dry cloth or piece of soft leather, should be employed a couple of times a day. The erectores pilorum of the affected part can be stimulated by stroking the nape of the neck with a coarse bathing-glove, that may be warmed if necessary.

In case there be a suspicion of a parasitic origin, the following solution may be applied topically: R. Ethereal oil of cloves, five drops; pure water of ammonia and pure glycerin, each eighty minims; tincture of sabadilla, one ounce. The application is made once a week by means of cotton; after an interval of from fifteen minutes to half an hour the parts are washed with soap and tepid water. The hair should be methodically brushed, and the occipito-frontal muscle should be exercised three times day; frictional electricity should be employed, and the nape of the neck should be stimulated morning and evening. The following order of procedure should be adopted: Brushing, exercise of the occipito-frontal muscle, stimulation, electrization.

DR. ROBERTS BARTHOLOW.

THE members of the medical profession will be gratified to learn of the complete restoration to health of DR. ROBERTS BARTHOLOW, and of his resumption of practice in Philadelphia. We trust, and are confident, that many years of great usefulness and honor await this keen intellect, whose contributions to the science, the literature, and the art of medicine are known throughout the medical world.

We have pleasure in announcing an article upon the treatment of cholera, by DR. BARTHOLOW, which will soon appear in THE NEWS. Upon this subject probably no American physician is capable of speaking with a greater authority or from a larger personal experience.

REVIEWS.

A MANUAL OF BACTERIOLOGY. By GEORGE M. STERNBERG, M.D. Illustrated with heliotypes and chromolithographs, and 268 engravings. Pp. 886. New York: William Wood & Co., 1892.

THE last quarter of the nineteenth century will be marked in history as the period of the cultivation of two of the most profitable fields of human knowledge, and it would be difficult to decide whether the harvest of the electrician or that of the biologist is most replete with blessings to mankind. One has but to compare Dr. Sternberg's new treatise on Bacteriology with his similar publication of ten years ago, to be impressed with the wonderful advances that have been made in the knowledge of microörganisms within that time. No American is better fitted for the task of reviewing the present state of bacteriologic investigation than Dr. Sternberg. As the pioneer bacteriologist of this country, the author first attracted attention about 1879 by his investigations into the etiology of yellow fever, since which time his name has become familiar from his various publications on septicemia, pneumonia, disinfection, etc., and his position as Director of the Hoagland Laboratory of New York City. The author's practical experience has enabled him to select from the almost endless variety of technologic devices and methods which have been suggested from time to time, and to present a clear statement of such technique as is necessary to an understanding of the life-history of microörganisms.

It is to be regretted, however, that the subject of filtration is passed over in but a cursory manner, inasmuch as it is quite time that the public should be awakened to the shameful manner in which it is being deceived by venders of filters. That "the porcelain filter is the most reliable and convenient for accomplishing the object in view"—the sterilization of culture-fluids in the laboratory—is all well enough, for there its shortcomings are understood; but thousands of citizens are being led to trust these filters implicitly for the removal of disease-germs from drinking-water, and as Dr. Sternberg's book is undoubtedly intended, in part, to furnish busy practitioners of medicine with knowledge that will enable them to give good advice in bacteriologic matters, it strikes us as scarcely sufficient to pass over the imperfections of this and all other filtering devices with the remark that "after the filter has been in use for some time it may permit the passage of bacteria, and it will be necessary to subject it to a high temperature for the purpose of destroying all organic matter contained in the porous porcelain." We would here call attention to a paper read by Dr. Chas. G. Currier before the Section of Public Health of the New York Academy of Medicine, April 5, 1889, on "The Efficacy of Filters and of Other Means Employed to Purify Drinking-Water," and to recent articles in the *Centralblatt für Bakteriologie und Parasitenkunde* by Babes, Giltay, Aberson, Jolles, Smith, Moore, etc., proving beyond contradiction that filters, as commonly employed, not only do not keep back bacteria, but furnish a nidus of the most dangerous sort for their

growth. By far the most interesting chapter of Dr. Sternberg's book is that treating of Susceptibility and Immunity, and we would wish the book a wide circulation for this one discussion alone, which places the reader in touch with the practical outcome of bacteriology as related to the prevention of disease, and by which he is encouraged to hope that the study of "toxines" and "antitoxines" will eventually lead to the intelligent and successful practice of *antitoxination* for the prevention of many diseases besides anthrax and smallpox. There appears to be a most promising field of research in relation to the possibility of acquiring immunity to certain toxins through inoculation with the blood-serum of immune animals.

The systematic treatment of pathogenic and saprophytic bacteria is all that could be desired, although in connection with the consideration of bacteria in infectious diseases not proved to be due to specific microorganisms space might well have been given for a few words indicating the tendency of recent research in the etiology of these diseases, as, for example, the claims made for *Dochmius duodenalis* as the cause of beri-beri, or for the sporozoa in carcinoma, as, in fact, the author has done in speaking of malaria. As regards the bibliography, its use would have been greatly facilitated by the employment of numbered references. Dr. Sternberg is to be congratulated in having so successfully digested the enormous mass of bacteriologic literature that has accumulated during the last decade. The book is thoroughly scientific throughout. It would have seemed fairer had the author taken pains to give as great prominence to the many creditable researches of other American investigators as to his own, which are frequently referred to in the bibliography. Most of the illustrations are good, particularly the heliotypes. The chromo-lithographic work is not up to the mark, when compared with that in similar German and French works. The presswork deserves no praise, being in many places very uneven, while the index is quite inadequate.

A DICTIONARY OF PSYCHOLOGICAL MEDICINE. Edited by D. HACK TUKE, M.D., LL.D., Examiner in Mental Physiology in the University of London; Lecturer on Psychological Medicine at the Charing-Cross Hospital Medical School; Co-Editor of the "Journal of Mental Science." Two vols. Philadelphia: P. Blakiston, Son & Co., 1892.

THIS work is destined to rank among the medical classics, and will add luster to the reputation that has already been achieved by its distinguished editor. It is not the product of hasty, spasmodic efforts, but shows throughout the results of careful garnering, scholarly method, and editorial judgment as to both matter and style. It contains more than the title, *Psychological Medicine*, would lead one to expect; many related subjects are treated, but none of which the physician and the student of psychiatry should not have knowledge. It is practical in the highest sense; a book that will become a standard work of reference for the general practitioner of medicine, as well as for the neurologist and the alienist. It is an improvement upon many of the latter-day dictionaries and encyclopedias, medical and otherwise, in the careful allotment of space to subjects, and in the editorial revision of language. Dr. Tuke has chosen his contributors not only from Great Britain, but from the workers and writers of continental Europe, and to a limited extent from our own country. American names that would naturally be looked for are not to be found in the list of contributors, which, however, includes such distinguished authorities as Chapin, Cowles, Donaldson, Earle, Jastrow, and Lombard.

Such a work is worthy of analysis and review, and of careful discussion and criticism of special articles, but the space assigned to a brief notice will not allow of this. The editor is not only an editor in fact, as well as in name, but has contributed between sixty and seventy of the definitions and articles, including such important and diverse subjects as Historical Sketches, Bedsores of the Insane, Classification of Insanity, Constipation in the Insane, Ecstasy, Mental Disorder following Influenza, The Sibyls, Somnambulism, Statistics of Insanity, The Insane in Turkey and Egypt, Vampirism, etc. Old-fashioned, and sometimes perhaps unprofitable, erudition is shown in many of the definitions. Many doctors, not excluding some neurologists and alienists, may learn here for the first time that *anhaphia* means diminution or loss of tactile sensation; that *cenospudia* is brown study, and that *oligopyschia* is imbecility or fatuity, a word which, with the editor, we will agree is quite unnecessary. Not a few terms have been introduced which are of little or no practical value, but are occasionally met in the literature of psychology and psychiatry, and therefore very properly have been defined.

It is difficult, without being invidious, where so much is meritorious, to choose for special mention particular contributions, but we might speak of the article by Ritti on Circular Insanity; of that on Consciousness, by Mercier; of that on Criminal Responsibility, by Orange; and of the medico-legal articles and definitions in general, which will prove of value to the legal as well as to the medical profession. Mickle writes of General Paralysis; Clouston, of Developmental Insanities; Langdon Downs, of Idiocy; Horsley, of Cretinism and Trephining; Charcot and Donkin, of Hysteria. Chapin contributes the article on Provision for the Insane in the United States, and Urquhart a Chronological Bibliography, beginning with 1584 and ending with 1892. Editor, contributors, and publishers are all to be praised.

DISEASES OF THE CHEST, THROAT, AND NASAL CAVITIES, including Physical Diagnosis and Diseases of the Lungs, Heart, and Aorta, Laryngology and Diseases of the Pharynx, Larynx, Nose, Thyroid Gland, and Esophagus. By E. FLETCHER INGALS, A.M., M.D., Professor of Laryngology and Practice of Medicine, Rush Medical College; Professor of Diseases of the Throat and Chest, Northwestern University Woman's Medical School; Professor of Laryngology and Rhinology, Chicago Polyclinic, etc. Second edition, revised and enlarged. 240 illustrations. 8vo., pp. 700. New York: William Wood & Co., 1892.

THIS concise and reliable manual well deserves a second edition. Its author is an experienced practitioner, whose specialism rests upon the broad foundations of general medicine, and he is therefore cautious not to lead students astray by laying undue stress upon

local accidents and coincidences. While, in some instances, we might have desired a different allotment of space to the various topics, this is, after all, a matter of personal judgment, and the author has evidently omitted or condensed with reason, and not at random. While he spells hemorrhage without the diphthong, yet the old and cumbrous form is followed in "anæsthesia," "œdema," "œsophagus," etc. The practice in any book should at least be uniform, and THE MEDICAL NEWS believes that it should be modern. While making due allowance for individual judgment, the section on Diseases of the Lungs and Heart cannot be considered complete when all reference to the important subject of pneumotherapy is omitted. The little said about Exophthalmic Goiter is likely to be misleading.

NEWS ITEMS.

Prize Essay on Homeopathy.—Thirteen essays in competition for the prize of One Hundred Dollars offered by Dr. George M. Gould (see THE MEDICAL NEWS, May 7, 1892, p. 510) have been received, and have been read by the judges, Prof. S. Solis-Cohen, Prof. A. P. Brubaker, and Dr. George M. Gould. Without knowledge of the opinion of the others, each judge wrote his own opinion, naming the essay he considered best, and (in case of loss or other accident) also that considered the second best. Upon comparing the three judgments it was found that they were identical. The essay, signed *Iconoclast* was deemed the best, and that with the signature *Jabeni* was the second choice. This unanimity of independent opinion, where there were so many essays of a very high order of merit, is a gratifying fact. Upon breaking the seal of the envelope of *Iconoclast*, we find the card of DR. WILLIAM W. BROWNING, 155 Reid Ave., Brooklyn, N. Y., to whom the prize has been sent. The other essays will be returned to the authors when their addresses and instructions are forwarded.

Courses in Bacteriology.—In view of the possible advent of cholera during the coming summer and the great importance of biologic examinations in the diagnosis, the Directors of the Carnegie Laboratory have arranged for short courses on this subject, under the direction of Dr. Edward K. Dunham, to be open to representatives of Health Boards, Health Officers, and to properly accredited medical men. It is designed that these courses shall have the same general scope and fulfil the same purpose as the cholera courses given at the Hygienic Institute in Berlin.

It is extremely desirable that there should be medical men throughout the country who are trained in the biologic diagnosis of epidemic cholera; so that if doubtful cases appear in any locality there may be at hand men competent to at once make satisfactory biologic examinations. The first cases of Asiatic cholera in the beginning of an epidemic are always doubtful cases; and it is only by means of biologic examinations that a definite conclusion can be reached as to their nature.

The courses begin about the 20th of January, 1893. Each course will continue for about two weeks. The fee, to cover expenses incurred, will be $25.00. Applications for admission to the courses should be made in advance to the Directors of the Carnegie Laboratory.

The Milwaukee Medical Journal is a new monthly publication, under the editorial care of Dr. W. H. Earles and Dr. W. H. Neilson. The first number bears date of January, and presents an attractive appearance.

BOOKS AND PAMPHLETS RECEIVED.

Mechanical Support in Fracture and Dislocation of the Sixth Cervical Vertebra. By H. Augustus Wilson, M.D. Reprint, 1892.

Report of a Case of Talipes Equino-varus. By B. Merrill Ricketts, Ph.B., M.D. Reprint, 1892.

Woman's Place in the Christian World. Superior Morally, Inferior Mentally, to Man. Not Qualified for Medicine or Law. The Contrariety and Harmony of the Sexes. By W. W. Parker, M.D. Pamphlet, 1892.

Microscopical Researches of the Corpuscular Elements of the Blood. By M. L. Holbrook, M.D. Reprint, 1892.

Practical Points in the Treatment of some Common Diseases of the Eye. By W. C. Bane, M.D. Reprint, 1892.

Report of the Surgeon-General of the Army to the Secretary of War for the Fiscal Year ending June 30, 1892. Washington: Government Printing Office, 1892.

Multiple Benign Cystic Epithelioma of the Skin. By J. A. Fordyce, M.D. Reprint, 1892.

A Manual of Clinical Ophthalmology. By Howard F. Hansell, M.D., and James H. Bell, M.D. Philadelphia: P. Blakiston, Son & Co., 1892.

Syphilis and the Nervous System. By W. R. Gowers, M.D., F.R.C.P., F.R.S. Philadelphia: P. Blakiston, Son & Co., 1892.

The Operative Treatment of Fistula in Ano. By Lewis H. Adler, Jr., M.D. Reprint, 1892.

Fistula in Ano: General Considerations; Etiology; Symptomatology; Diagnosis; Prognosis. By Lewis H. Adler, Jr., M.D. Reprint, 1892.

Anal Fissure: Its Etiology, Symptomatology, Physical Exploration, Diagnosis, and Prognosis. By Lewis H. Adler, Jr., M.D. Reprint, 1892.

Human Embryology. By Charles Sedgwick Minot. New York: William Wood & Co., 1892.

Criminal Responsibility in the Early Stages of General Paralysis. By Frank P. Norbury, M.D. Reprint, 1892.

Surgical *versus* Educational Methods for the Improvement of the Condition of the Feeble minded. By Frank P. Norbury, M.D. Reprint, 1892.

The Treatment of Pulmonary Tuberculosis by Creasote. By Edwin E. Graham, M.D. Reprint, 1892.

Clinical History of a Case of Successful Extraction of a Piece of Steel from an Iris and Lens by an Iridectomy, with Subsequent Absorption of the Lens and Recovery of Normal Vision. By Charles A. Oliver, M.D. Reprint, 1892.

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ORIGINAL ARTICLES.

SOME EXPERIMENTS WITH MODIFIED TUBERCULIN.[1]

BY JOSEPH EICHBERG, M.D.,
PROFESSOR OF PHYSIOLOGY IN THE MIAMI MEDICAL COLLEGE, CINCINNATI.

THE lamentable failure of the original Koch treatment of tuberculosis is still fresh in the medical mind. Heralded in advance by the one man who had inseparably identified his name with the great scourge of the temperate zone, the treatment was received with confident faith by the entire profession. The circumstances preceding, and the manner of, its publicity savored somewhat of charlatanism; but these were explained and excused on the plea that great political and personal pressure had been brought to bear on the illustrious scientist, to whom modern pathology owes so much. More than any other had he contributed to the establishment and proof of the bacterial theory in pathology as applied to every single member of the group of infectious diseases. It was but natural that to him the world of scientific medicine should turn for some practical result of his great philosophic and experimental work.

Nor was he wholly blameworthy. Clinicians of great repute and deserved eminence had closely followed his experiments, to which they lent their countenance, which they copied in detail, and subsequently reported in terms of fulsome praise, with some of their marvellous results. Few in the profession would question any statements emanating from such men as Koch, Bergmann, Gerhardt, and Senator; everyone was excited, and there went up a feverish cry, "To Berlin."

The disillusion came speedily enough. There could be no doubt of the wondrous effects of the new remedy, but their duration was brief, and following the temporary improvement there came a period of increased destruction, with dangerous complications, and not a few fatalities. Where there had been great authority to sanction, there now came the menacing voice of Virchow, commanding a halt, fully justifying, on the post-mortem table, his scathing condemnation of the method, and of its disastrous consequences.

The rocket had soared high, and its flight was hopefully followed by many a poor sufferer; the thud with which it speedily fell carried a corresponding gloom, and seemed to close another avenue of escape to many tuberculous patients, to whom there had come a promise of new life.

However, not all were willing to wholly abandon a method that seemed to rest on so secure and scientific a basis. The whole theory of establishing immunity by inoculation with attenuated cultures, a theory positively proved by Pasteur, seemed to point to some such logical result as Koch had presumably achieved. True it was, that in one case we were dealing with a healthy organism, and the inoculations were preventive; in the other, the disease was more or less fully established, and the inoculation was to be curative. In the one case we were anticipating the possible development of an infectious disease; in the other, we had to deal with an individual already in the grasp of the destroying malady.

Yet there existed between the two classes an analogy of causation so close as to reasonably suggest that a similar course of treatment would be attended with results positively beneficial. That such a line of reasoning embodies no sophistry has only lately been proved by the brilliant results of Cattani, Tizzoni, and others in the cure of fully established cases of tetanus. By inoculation with an antitoxin obtained indirectly from pure cultures of the tetanus-bacillus, no less than six cases have been reported as cured, a result far beyond the limits of mere accidental recovery.

Consequently, there came to the minds of many a certain doubt as to the expediency of wholly dropping both Koch's plan and his remedy, although the latter was then strongly in disgrace. Efforts were made by a number of observers, as also by Koch himself, to separate from so-called tuberculin those principles that gave rise to the high fever, general malaise, and increased destruction around the tuberculous deposits. If this could be achieved, the remainder might then be counted upon to manifest all of the beneficial and curative properties of the original lymph, without exposing the patient to any risk from the treatment.

In two instances have these efforts at modifying the lymph been notably successful: in the case of Klebs, who obtained from Koch's tuberculin a compound which he calls tuberculocidin, and for

[1] Read at the meeting of the Mississippi Valley Medical Association, October 14, 1892.

which he claimed great curative powers; and in the case of Hunter,[1] who made a most careful chemical analysis of the lymph, and who succeeded in isolating from the lymph a number of substances, which he designated by letter as modifications A, B, CB, etc.

The employment of modification B seemed to be attended with fewer unpleasant consequences than that of any of the others, an experience that was subsequently verified in the human subject. This modification consists in the isolation of an albumose or group of albumoses, which are re-dissolved, and then employed in a diluted form. Klebs retained the secret of the manufacture of his tuberculocidin, though he allowed it to be sold in the open market. Hunter, guided by a finer, more unselfish professional instinct, at once published his results, and also the method of preparing his modification. It is his preparation B which has been used in our experiments, the same that received the indorsement of Dr. Kinnicutt,[2] whose moderately satisfactory results, together with my own belief that we had not yet exhausted all there was in tuberculin, induced me to subject it to a test, whose results I will give in summary.

First, in defence of these experiments, which might otherwise be open to censure, it must be premised that both Hunter's and Kinnicutt's experience seemed to establish the comparative harmlessness of this peculiar agent. Without such assurance I should not have been tempted to its trial. The mere fact that want and misfortune compel many to seek the asylum of a hospital certainly confers no right upon the physician to trifle with remedies that may possibly aggravate their disorders; and it was solely because of the prominence given to the quality of the remedy, and the freedom from general and local sequelæ of an unfavorable kind, that it was given so thorough a test.

These, then, were the conditions upon which we engaged in these experiments: (1) That the injections should not give rise to any immediate local reaction; (2) that there should not follow fever, or depression, or general lassitude; (3) that there should be no symptoms indicating an increase of destructive process, or a development of fresh inflammatory change in the seat of tuberculous disease; (4) that the dosage should be regulated by careful and repeated observation of the temperature and pulse.

All these indications have been fully met. I can here give only a short *résumé* of the results achieved. Such as they are, they are full of encouragement, and mark the remedy as worthy of more extended trial.

It must be remembered that we were dealing, in the main, with a most unfavorable class of cases, that our experiments were made during an exceptionally hot summer, and that our patients were not selected with any view as to special fitness for the experiment. All alike received the injections; many were then hopelessly sick, two almost moribund; manifestly little could be hoped for from any treatment at this stage; yet it was desirable to define as nearly as possible the limits within which benefit might be derived, and this could only be done in the way suggested.

Incipient cases, those most likely to be permanently relieved, rarely present themselves for hospital aid during the pleasant weather. Still able to go about, they find some means of eking out an existence until the rigors of winter and increasing helplessness drive them to some charitable institution.

Another feature, connected solely with hospital life, has had its bearing upon our cases. The hospital authorities have no power of imposing restraint upon any patient, except in the cases of such as are under police surveillance. As soon as a patient insists upon his discharge, it must be granted, even though it be against his own interests; and, in most instances, it is useless to appeal either to his reason or to his fears. Thus it happens that some of our most promising cases passed beyond control after the first manifest improvement in their condition had taken place. In private practice, mere self-interest will bind the patient in such a case, so long as there is any hope of further betterment.

The injections were made daily by means of a syringe with asbestos wrapping and packing. The syringe and needles, as also the glass cups for the solution, were sterilized daily before using—a precaution which I believe unnecessary, but which was followed throughout, to avoid any accidental contamination. The solution was kindly prepared for me by Mr. Mark Brown, of Miami Medical College, in the laboratory of the Cincinnati University, according to the directions given by Dr. Kinnicutt.[1] The lymph, from which the solutions were made, was part of an unbroken package, received from Germany about two years ago. In the process of preparation all apparatus was sterilized, and the water used in dialyzing was previously boiled. The

[1] British Medical Journal, July 25, 1891.

[2] New York Medical Record, May, 1892.

[1] Method of preparation of Hunter's modifications. Modification B: 1 c.c. of tuberculin, 5 c.c. distilled water, saturation with preferably large crystals of ammonium sulphate for twenty-four hours in the cold, the precipitate filtered off and freed as far as possible from any crystals of ammonium sulphate, placed in the dialyzer, and dialyzed just so long and no longer in running water, and then in distilled water until all trace of ammonium sulphate has disappeared. Crystals of thymol are added to the solution to prevent any putrefactive change: the solution is then made up to such bulk that 10 c.c. shall correspond to each c.c. of tuberculin employed. (Title: B, 10 per cent.)

dialyzer consisted of fine sausage-casing. The solution was received and kept in sterilized glass-stoppered bottles.

In a kind letter from Dr. Kinnicutt, he says: "Both Dr. Trudeau and I deemed it prudent to still further dilute the 10 per cent. preparation B and CB. The formula which we adopted was as follows: 1 c.c. of the 10 per cent. solution was diluted with 10 c.c. of ½ per cent. carbolic acid solution, and of this 0.002 gram was used by me for the initial inoculation; 0.005 gram by Trudeau. By me the dosage was increased by 0.002 gram daily, by Trudeau by 0.005 gram. If any elevation of temperature above 100° F. followed an inoculation in an apyretic case, the same dosage was retained until such a rise ceased to be developed. In pyretic cases the daily range without inoculation was carefully studied for several days, and any rise above the daily range, following an inoculation, was regarded as an indication to diminish the dosage or hold it at the same amount. As I stated in my lecture, the B preparation only should, in my judgment, be used."

These directions have been carefully followed, except that the increase of dosage, begun at 0.0025 gram, was afterward changed to 0.005 gram daily in cases in which tolerance was well established. In no case did the amount injected exceed 0.100, which, as we were dealing with a 1 per cent. solution of the original lymph, represents a very minute dosage. In some later experiments reported by Trudeau,[1] the initial dose was 0.003 gram daily, which was finally carried to 0 7 or 0.8, the increase being slowly kept up as long as no rise of temperature occurred; but there seemed to be no indication in our cases for any larger dose than the one mentioned. Indeed, symptoms of decided improvement set in in a considerable number of cases before the dose reached 0.03 gram of the diluted solution.

The clinical material embraces twenty-nine cases of undoubted pulmonary tuberculosis, one of lupus, and one of tuberculous peritonitis. With reference to the latter, some doubt may be expressed as to the accuracy of the diagnosis. The only reply that I can make is that all of the symptoms ordinarily manifested in tuberculous peritonitis were present; that there was at the same time incipient pulmonary tuberculosis, with continued fever; and that the patient was a negro, chronic tuberculous processes being especially common in the colored race. In this case perfect recovery ensued.

The case of lupus, which had been treated a year before with the original tuberculin without success, remained under observation for too short a time to furnish any reliable data, the patient being expelled from the hospital for insubordination. Another patient, a case of pulmonary tuberculosis, with beginning excavation of the lung, improved so much that he felt obliged to celebrate the change in his condition by assaulting the cook, whom he thoroughly worsted in a fistic encounter; though, at the time of his admission, this patient was unable to leave his bed. One case of pulmonary tuberculosis, with elastic fibers in the sputum, was discharged perfectly well; fever, cough, expectoration, all had disappeared, and there was a gain in weight of fifteen pounds.

Of the 29 cases of pulmonary tuberculosis, 22 were males, 7 females; 4 of the latter were colored. The ages of the patients ranged from twenty-one to fifty-one years, 11 being below thirty, and 9 below forty years of age. Six patients died; one had, in addition to the pulmonary changes, chronic interstitial nephritis; one died twelve days after admission from a complicated tuberculous laryngitis, which rendered swallowing very difficult; another had total adhesion of the pericardium, with fatty kidneys; a fourth was almost moribund on admission, but lived seventeen days.

In no single instance could it be said that death was hastened by the injections; nor, in the case of tuberculous laryngitis was there any change for the worse in the local ulceration. In no case was hemorrhage observed to follow the injections. In general, all patients, without exception, declared that they felt better, breathed with greater freedom; a weight seemed to be lifted from the chest, and the general condition seemed to indicate a better tone.

Of the remaining cases, three are still in the hospital; one was discharged at her own request in a condition little better than when she came; one was discharged well; one nearly well, and fourteen were greatly improved.

A rating as to improvement was based upon a gain in weight, a diminution in the frequency and severity of cough, diminished quantity of expectoration, and cessation of night-sweats. The physical signs were altered, inasmuch as dry sounds took the place of coarse, moist râles and fine crepitations, showing clearly an arrest of the destructive changes in the lung-tissues. The computation of the bacilli was not made, owing to the uncertainty attending such estimates.

The average stay in the hospital of all cases subjected to the treatment by inoculation was 56.6 days. Few cases received inoculations for more than fifty days, many leaving earlier—as soon as they had in a measure regained their strength. In no instance did a patient suffer any local inconvenience about the point of inoculation. For the

[1] THE MEDICAL NEWS, September 10, 1892, p. 299; September 24, 1892, p. 364.

most part, the injections were given in the infraclavicular region; for no other reason than that the parts, being already exposed by the examination, offered a convenient surface. The strength of the solution was gradually increased, so that the amount given never exceeded the contents of one syringe.

The effect on the urine was, in many instances, decided; an increased flow rapidly followed the inoculations, and the daily average remained higher during the time of the experiments. The first effect on the sputum was to cause an increased expectoration, to be followed later on by a gradual diminution. Parallel with this was a change in color and composition, the sputum becoming less viscid and more distinctly mucous in character. The cough became less troublesome. Three of the cases were interrupted in their convalescence by a prostrating diarrhea, which seemed in no way connected with the inoculations.

The most surprising effect was observed in the temperature. By the exercise of great industry the nurses in the respective wards kept records for two weeks of hourly observations of the temperature before and after the injections. Subsequently, these were supplemented by records taken every three hours.

In but the fewest instances was there noted any decided rise, *i. e.*, to, say, more than 2°; while in the larger number there was, within the six hours immediately following the injection, a decline of between 2° and 3.5°; this decline followed whether the injections were made early or late in the day, so that it was not due to diurnal variation. In cases in which originally there had been continuous fever, it was noted that in all, save the most advanced, the mean daily temperature steadily declined, approximating the normal line during the entire twenty-four hours. In cases that were apyretic at the outset the thermal line remained subnormal during the greater part of the twenty-four hours.

The experiments were sometimes interrupted for a day or two, when it was noted that the maximum of the intervening days was higher than when the injections had been given. It was a common experience to find the temperature after midnight subnormal. The pulse-rate was slowed, but without much gain in the volume or force of the circulation. In apyretic cases there was never any increase of temperature.

In conjunction with the inoculations all patients received five-drop doses of creasote, with oil.

Our present position has been well expressed by Trudeau in the paper already quoted. "More extended research and clearer knowledge of the various elements, both beneficial and injurious, contained in bacterial products, as well as of their effects upon tuberculous animals, may in the future lead to still further improvement in this as yet tentative method of treatment. At present its limitation to early and apyretic cases seems indicated." On the strength of our own experience we would go somewhat further. The greatest benefit—indeed, complete restoration with cicatrization of tuberculous deposits—may be hoped for in incipient cases during the apyretic stage; but even in advanced cases some improvement, with consequent prolongation of life, will be frequently observed. Experiments hitherto reported have, in the main, been carried on in localities in which the altitude and climate contribute greatly to favor a cure. Yet the fewest of patients will be so situated financially as to avail themselves of climatic changes; indeed, the majority will not be able to do so. It is especially with a view to again call attention to the possibilities of prompt treatment in the incipient stage of such cases that I have reported this comparatively limited number of observations.

THE TREATMENT OF TUBERCULOUS LARYNGITIS WITH MODIFIED TUBERCULIN.[1]

A Preliminary Report.

By MAX THORNER, M.D.,
of Cincinnati, Ohio.

Not more than twelve years ago tuberculosis of the larynx was considered an incurable disease—so hopelessly incurable, in fact, that nobody attempted to treat the local affection with the view of healing it, but simply for the purpose of alleviating, if possible, the agonizing sufferings of the patients. It was in the year 1880 that Prof. Moritz Schmidt, of Frankfurt, reported sixteen cases of tuberculous laryngitis that he had cured (of which number, after thirteen years, there had been no recurrence in the larynx in two).[2] Then, for the first time, it was strikingly emphasized that one should enter upon the treatment of laryngeal tuberculosis with the view of a possible cure, and subsequent events have proved the correctness of this position. I need only mention the names of Heryng, of Warsaw, and Krause, of Berlin, who, by their surgical treatment of this affection, have established the fact (as many others, too numerous to mention, have also done by other methods of treatment) that there is a possibility of laryngeal tuberculosis being cured. Unfortunately, the number of such cases cured and remaining so is exceedingly small.

It is, therefore, not to be wondered at that, when the first enthusiasm over Koch's tuberculin had subsided, the disappointment was so much the greater. The agent had not done for the larynx

[1] Read before the Mississippi Valley Medical Association, October 14, 1892.

[2] M. Schmidt: Tuberculin bei Kehlkopftuberculose. Verhandl. d. X. Cong. f. inn. Medicin. Wiesbaden, 1891.

what had been expected; for the larynx was the very region to demonstrate *ad oculos* the curative action—to allow the study of every phase of any change that might take place. It was in this sense that Lennox Browne wrote in his early monograph on Tuberculin: "*Not only is the larynx the most appropriate place for the study of true tubercle, but it is also the most appropriate and convenient site for accurate observation of the various stages of its development toward reparation which takes place under Koch's treatment.*"[1] The outcome of the numerous experiments is yet fresh in our minds. Referring to the larynx alone, the cases in which improvement or cure followed the administration of the lymph were few, while evil results followed in many cases. Not only did new tuberculous eruptions occur in situations in which previously the tissues appeared healthy, but swellings and edema developed in many cases, causing threatening dyspnea, which, in a few cases, necessitated tracheotomy.

When "crude tuberculin" (as it was afterward called) had fallen into disuse, there were quite many observers who were at heart convinced that the underlying principle of the treatment was correct, and that it would finally be triumphant. This idea is very prettily expressed by Prof. M. Schmidt in his concluding remarks on "Tuberculin in Laryngeal Phthisis," when he says:[2] "If this experiment should fail, we shall be compelled to bid farewell for some time to the light that shed so brightly its warm rays of hope into the most profound depths of human misery. The road, however, opened to us by the great Robert Koch is sure to lead us some day to our goal."

Since that time experiments have been made with some modifications of tuberculin, the details of which have already been entered into. The following two cases have been treated with Hunter's modification B of tuberculin,[3] for the supply of which I am indebted to Dr. Joseph Eichberg, who has also seen the cases several times with me. The injections were always made between the shoulder-blades, with carefully sterilized syringes and needles. The temperature was taken every two hours, from 7 A.M. to 9 P.M., the patient always sleeping soundly through the night.

CASE I.—Charles V., forty-three years old, was first seen March 24, 1892. He had been discharged from St. Mary's Hospital but a few weeks previously, where he had been under treatment for pulmonary tuberculosis. At the time of his discharge from the hospital the cough had improved. At the time of his first visit he was coughing incessantly, was very hoarse, complained of pain in the laryngeal region, and had some dyspnea. He was a typical case of pulmonary tuberculosis. He weighed 123 pounds. His temperature ranged from 98.4° to 101.6° F. Physical examination revealed the presence of an active process in the lungs. Tubercle-bacilli were found in the sputum.

The entire larynx was congested; the left vocal band was intensely swollen to double its normal size, especially so in its posterior portion; the upper surface and free edge were rough and uneven, having the appearance of being covered with small excrescences, which assumed a bunch-like shape near the inter-arytenoid fold. The processus vocalis was marked by a small yellowish ulcer; beginning at this particular spot there was considerable swelling, confined to the laryngeal side of the mucosa covering the left arytenoid cartilage; this infiltration was also the seat of several superficial ulcers; the lower surface of the left band was considerably infiltrated, presenting the appearances seen in an attack of chorditis vocalis inferiorjs acuta; while repeated examination, with the aid of Prof. Killian's excellent method,[1] failed to disclose any affection of the posterior laryngeal wall, a favorable location for tuberculous deposits.

Surgical treatment being contra-indicated on account of the extremely weak condition of the patient, the larynx was treated locally with lactic acid and menthol. Internally the man took beechwood creasote. This treatment seemed to hold further advance of the local trouble in check, whilst the general condition had improved materially at the time when the injections were begun. He had gained ten pounds; felt stronger; coughed very little, at times not at all. There was not quite so much hyperemia of the larynx, and some of the small superficial ulcers had healed. Otherwise the condition was unchanged. The temperature ranged from 98.6° to 99.4° F.

On September 5, 1892, the first injection of 0.0025 of tuberculin was practised. This amount was gradually increased until, on October 8th, 0.1 was reached. The injections were made every day. The temperature ranged from 98° to 99.6°. Only on one day was there a temperature of 100.2°, and this was the second day after I had commenced injecting 0.1; after that the temperature returned to 99.6°. The highest temperature was usually found from two to four hours after the injections, which were generally made between 10 and 11 A.M. The lowest temperatures were registered in the early forenoon. Ordinarily, the temperature did not rise above 99°. The general condition of the patient was always good. Only during the first few days did he complain of general malaise, sometimes of headache; but these soon left him, never to return.

The laryngoscope at no time revealed any increase of the hyperemia, any new swelling, any evidence of tuberculosis in places previously free.

[1] Lennox Browne: Koch's Remedy in Relation specially to Throat Consumption, 1891, p. 3.

[2] Loc. cit.

[3] Brit. Med. Journal, 1891.

[1] G. Killian: Die Untersuchung d. hint. Larynxwand. Jena, 1890. Rudolf Keller: Zur Tuberculose der hint. Larynxwand. Inaug. Dissertation, Freiberg, 1892.

There was, in fact, at no time any untoward symptom noticed in connection with the larynx. After the fifth injection it was possible to notice a subsidence in the congestion. The congested mucosa gradually assumed a paler color, while the infiltration of the vocal band, especially in its anterior portion, had greatly diminished at the end of the third week, when Dr. Eichberg saw the case again; the large superficial ulcers over the arytenoid had healed, and the lobular swellings around the processus vocalis had decreased in size; the subglottic swelling had also greatly abated. This improvement continued, though slowly, but in an unmistakable manner. On October 6th, one month after the first injection, the patient volunteered the statement that he experienced much less dyspnea when walking up hill. On October 14th, the improvement had continued; there remained only a small portion of the excrescences in the posterior part of the cord; the subglottic swelling, though still visible, was materially reduced, and the mobility of the left cord was greater. The voice was clearer than before.

CASE II.—Mrs. S. M. H., thirty-five years old, has had pulmonary tuberculosis for a number of years, an exacerbation usually taking place in the autumn. For two months she had complained of pain in swallowing. Tubercle-bacilli were found in the sputum.

On September 20, 1892, laryngoscopic examination showed the epiglottis to be considerably thickened; on the laryngeal surface, near the left upper border, was a yellow ulcer as large as a split-pea. There was also considerable pear-shaped swelling of both arytenoids, and some slight swelling of the inter-arytenoid membrane. The temperature ranged between 98.8° and 99.8° F. On September 27th, a first injection of 0.0025 was practised. The dose was gradually increased every day until it was 0.035. There was never any untoward symptom in connection with the larynx. The small ulcer healed; the infiltration of the epiglottis slightly diminished; otherwise the condition remained unchanged. The temperature ranged from 98.6° to 99.6°. The patient became able to swallow without pain.

These two cases are insufficient, and the time of observation is yet too limited to permit of any definite conclusions. They seem, however, to encourage further research in the same direction with some of the modifications of tuberculin. I shall certainly continue to investigate the effect of this powerful preparation, deprived of its toxic constituents, and I confidently hope that many others will do the same, for, as the late S. D. Gross has said: "In an inquiry of this kind individual experience amounts to nothing; collective experience is everything."

Adolph Baginsky has been elected Professor of Pediatrics at the University of Berlin.

SOME PERSONAL OBSERVATIONS AND REFLECTIONS UPON ALCOHOLISM, THE EFFECTS OF ALCOHOLIC ABUSE UPON POSTERITY, AND THE TREATMENT OF ALCOHOLISM.[1]

BY H. ERNEST SCHMID,
OF WHITE PLAINS, N. Y.

I DO not know of any subject which is of greater importance than alcoholism to the individual, the family, and even to the nation at large. Alcoholism far exceeds in interest, magnitude, and wide-reaching consequences, morphinism or any allied vices. He who lives under the constant influence of an opiate will become conspicuously obnoxious to those surrounding him only when deprived of the enslaving drug. In the majority of instances he will commit acts of selfishness and cruelty only when impelled by the bitterest misery to secure, at any hazard, the means of purchasing more opium or cocaine, or whatever special form of anodyne or opiate to which he may be particularly attached.

According to my, not small, experience, when supplied sufficiently with all he craves, beyond being a social nuisance, he is comparatively harmless. But how different with the man who drinks to excess! In many instances he becomes a brute, and acts brutally toward strangers, friends, and relatives.

In order to criticise, or select intelligently, a plan of treatment adequate to the greatness of the subject, it is but proper to contemplate first the way in which alcohol damages the system. Of course, I speak of the damage wrought by its abuse.

The effectively intoxicating part of all alcoholic beverages is called ethyl-alcohol, and by pharmacologists is properly ranked with the poisons; but, in common with other drugs of the same class, it is, in suitable cases, prescribed by physicians, for when a physician orders brandy in the form of cognac, his patient thus takes about 55 per cent. of ethyl-alcohol. When he orders Malaga wine (a favorite prescription for children in certain countries), the little one gets from 17 to 28 per cent. of the same alcohol, and in lager beer 3 per cent. to 5 per ecnt.

It has often amused and astonished me at the same time when I have heard it said that lager beer is a non-intoxicating drink, as, for example, the man who imbibes ten glasses of it (often but an ordinary feat) drinks about half a glass of pure ethyl-alcohol. This substance is carried into the blood, chiefly through the intestinal veins, and to some extent through the chyle-vessels. It speedily passes through the walls of the vessels, and the richer an organ is in blood the more of the alcohol it imbibes. The rapidity with which the entrance of alcohol into

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[1] Read at the meeting of the New York State Medical Association, held in New York, November 15, 16, 17, 1892.

the system is effected is truly astonishing, for in only a few minutes after it is swallowed it can be found in the venous and arterial blood and in the main trunk of the lymph-vessel system.

Of all the organs that absorb this poison from the blood the brain is the first in this process, and hence also first in showing its effects. It is thought that the action upon the nerve-centers is atomic or molecular in character. If the excess in drinking is slight, and of short duration, this atomic union will occur in a very loose manner, so that the alcohol must soon let go its hold again, so to speak; but when severe and protracted indulgences are practised the chemical affinities of the nerve elements are paralyzed, and their life finally destroyed.

Next in order comes the heart, whose action is quickened, resulting in a more rapid pulse, while the tension of the arterial walls and blood-pressure are lessened. The blood itself is *not* changed by the alcohol.

Upon the digestive function alcohol exerts a peculiar influence. Small doses, diluted, stimulate and increase the secretion of the gastric juice; whereas, large amounts interrupt, delay, or entirely suspend it. Competent observers maintain that any quantity at all, if taken during the process of digestion, produces the latter effect.

Tissue-change is decreased, according to almost all observers, by the use of alcohol. The breathing, at first accelerated, gradually becomes slow, and the excretion of carbonic acid is lessened. The temperature of the body is affected only by large doses, which lower it. A great expenditure of warmth is caused by the dilatation of the vessels of the skin, by paralysis of the muscles, and by a reduction of the oxidizing processes in the tissues.

A study of the intoxicating and, hence, destructive effects of alcohol upon a child, gives still more guidance to its proper treatment in the adult alcoholist. There we notice far more clearly how powerfully the nervous system is attacked by it. The first stage is almost always one of excitation, though this is occasionally absent in the child, as well as in the adult, either on account of a large quantity, or a very susceptible organism. This stage of excitation is marked by a great sensitiveness to external excitants, and by most active muscular unrest, often progressing to light muscular spasms of a clonic or general tetanic character. In the next stage the child becomes deeply depressed. There is a relaxation of nerves and muscles, resembling paralysis. In this condition, coma-like, it may lie from twelve to thirty-six hours, being roused with difficulty, and only for moments at a time.

Occasionally, I have said, there is an absence of the first period of excitement, and the rapidity of the absorption of alcohol is exemplified by an action almost lightning-like upon the central nervous system. I once saw a man drink a full goblet of whiskey, and in less than five minutes, a second. A third was attempted, when all at once the glass fell from his hands, and he lay senseless upon the floor. He was ill for weeks.

During the first week of September I was called to see two cases of alcoholism that were to be treated at the Keeley Institute. Both, however, arrived in so terrible a condition that I was sent for to see if they could be roused from the almost coma-like state in which the last drink had placed them. It was impossible. One expired within fifteen minutes of the time I first saw him, the other within two hours. The latter presented a very interesting point. He was pulseless, unconscious, insensitive to any touch; his feet and hands were cold. I gave him hypodermatic injections of brandy, and he reacted. In an hour he was perfectly conscious, answering all questions, but he lived only about two hours from the time I made my first visit. I mention these cases on account of the interesting deductions to be made from them.

In prescribing alcohol for a child we should always bear in mind that it not infrequently produces convulsions in the infant; and, furthermore, that even very small doses of it act only transiently as a vivifier and apparent strengthener of the nervous system; even then, such effects are soon followed by relaxation. In reality alcohol only transiently benumbs the feelings of weariness; and finally, in larger doses it produces a momentary, never an enduring strength. It is, therefore, indicated medicinally only in that pathologic condition that approaches collapse, with a frequent and small pulse. In such cases alcohol may serve to "tide over," by causing temporarily a slower, fuller, and stronger pulse.

We should also never forget that in tea and coffee we have the agents, *par excellence*, that raise and sustain strength in muscular and mental labor, and this is truer of tea than of coffee. The wife of Lieutenant Peary, lately returned from a most successful North-Pole expedition, informed me that tea almost always, coffee rarely, was their beverage.

Alcohol was some time ago excluded from the quartermaster's department of Northern expeditions. It is a mistake on the part of any practitioner to direct even the smallest doses, long continued, of alcohol in water or milk, to be given with a view of imparting strength. This it will not do, but will disturb the natural course of digestion by inducing chronic irritation of the mucous membrane of the stomach, with dyspepsia. Chronic gastric catarrh, difficult of correction, enlargement of the intestinal lymphatics, rapid loss of weight and strength, and

in a few instances cirrhosis of the liver, are some of the pathologic conditions that follow long-continued use of even small doses of alcohol.

But what are these effects compared with those wrought upon the central nervous system of the child? The answer can occasion no surprise if we recall the grave and constant anatomic lesions that develop in the cerebro-spinal system of the adult alcoholist.

The delicate nerve elements of the child are still in an active state of development, *i. e.*, more full of blood than later in life, and the meninges therefore very prone to congestions, to dangerous serous effusions and to inflammations. For these reasons alcohol must affect the brain of the child much more injuriously. From its baneful influence often arise epilepsy and chorea. That, in many cases, alcohol is the cause is recorded by thoughtful and investigating physicians, and has been proved by the happy cure of these dreadful nervous disorders as soon as its use was discontinued.

I cannot resist alluding with a deeply-felt word of warning to the pernicious practice of allowing and even prescribing for nursing women the systematic use of alcoholic drinks with a view of producing a greater flow of milk for the baby; it is often advised by the family physician, and the hired wet-nurse stipulates as her right a certain daily allowance of beer or whiskey in the shape of milk-punch.

Could a sadder mistake be made? These same men, who allow or advise the practice, are doubtless opposed to the use of so-called swill-milk, which means milk from cows fed on distillery grain, by the eating of which they are kept in a chronic state of mild intoxication. But opposed as they are to the employment of swill-milk for adult or child, they help to produce in the human female a similar swill-milk for the poor infant. Competent and close observers have discovered a connection between this habit of the mother and the development in the children afterwards of true imbecility, and even idiocy.

Of all the effects upon the nervous system of the child, however, the most distressing and far-reaching is that upon the moral power, upon the morality of the being. Alcohol paralyzes this. The youth, who, so to speak, was alcoholized as a child, gives free reign to his passions. His will-power stands at zero. Dissipations have no terror for him at the very first meeting of them, nor have crimes. He not infrequently ends his career as a suicide.

Neurasthenia is a growing evil, even amongst the school children. Think how one admires, almost as a curiosity, a really fresh, sound, healthy child. As head of our local Board of Education for many years, I have given more than usual attention to the young in my district, and I have been astonished to find how many pupils at the age of from twelve to fifteen complain of headache, palpitation of the heart, insomnia and bad feelings generally—or perhaps they are dull and indifferent to everything, and display great weakness of memory and unnatural sleepiness and easily-induced exhaustion. Parents of such unfortunate and uninteresting and non-progressive children are very likely to ascribe all the shortcomings of their poor children to the fault of the much-suffering teacher.

What must be the effect of all such changes if allowed, unchecked or unremedied, to go on into adolescence and manhood? I think far beyond the wretchedness with which it burdens the entire life of such an adult is to be considered the inheritance it bequeaths to his children.

Heredity is an unquestioned fact at this age. We know that qualities of the parents reappear in the child. A child whose father died before it could recognize or remember him will often exhibit the same peculiar gait in walking. If, occasionally, the child will escape such inheritance the grandchild may have it. Some families, from generation to generation, inherit mathematic or artistic capacity. If virtues and great traits are inherited, why should not defects, dispositions to diseases of body or mind, or of both? There is no question that the drunkenness of parents can and does entail the love for drink upon the offspring, or it may at least very decidedly imperil life and health. When we reflect on the fact that inheritance makes the good or bad quality or defect of the parent stronger in the offspring, this matter assumes a far graver aspect.

The craze for drink, the so-called acute alcoholisms, alcoholic mania, dipsomania, delirium tremens, chronic alcoholism, specific alcoholic psychoses—all are classed with mental disorders. As such they can descend to the children. Dipsomania can be transmitted from father to child, or else the effect of such defect in the father may produce an otherwise injured mentality in the offspring. It is astonishing how early this was recognized, for Plutarch uttered this startling sentence: "Ebrii gignunt ebrios"—Drunkards beget drunkards.

Many facts have been collected, all pointing in this same direction.

1. A man became a drunkard after middle life; children born to him before his degradation remained free from the vice of drunkeness, while those born afterward became drunkards.

2. Erasmus Darwin states that diseases inherited from drunkards descend to the third and fourth generations, until, finally, the family dies out.

3. Another observer says that of ninety-seven children of drunkards only fourteen remained free from some defect.

4. Still another maintains that fifty per cent. of

the idiots and imbeciles of great cities are the children of drunkards.

5. The children of drinkers inherit the same or a greater predisposition to nervous disorders than those of nervous or really insane parents. They suffer most frequently in infancy from convulsions and epileptiform diseases.

6. Districts known as "drinkers'-districts" in Europe furnish far fewer good recruits for military service.

7. A law was passed in Sweden against drunkenness, *i. e.*, making it a punishable offence, and since then the number of persons unfit for military service on account of undersize and general weakness has grown much smaller.

8. A distinguished specialist on children's diseases observed ten families of drinkers and ten of temperate parents for a period of twelve years.

The ten drinker-families produced in those twelve years fifty-seven children. Of these, twenty-five died in the first weeks of life, of weakness, of convulsive attacks, or of edema of brain and membranes; six of them were idiots; five were stunted in size, and were of real dwarfish growth; five, when older, became epileptics; one, a boy, had grave chorea, ending in idiocy; five had inherited diseases and deformities, such as chronic hydrocephalus, harelip, and club-foot; two of the epileptics mentioned became, by inheritance, drinkers. Only ten, therefore, of all these fifty-seven, or 17.5 per cent., showed, during youth, normal disposition and development of body and mind.

The ten temperate families produced in the twelve years sixty-one children. Of these, five died in the first weeks, of weakness; four, in later years of childhood, had curable nervous affections; two only showed inherited nervous defects. The remaining fifty, or fully 81.9 per cent., were normal in every way, developing well in body and mind.

My friend, Dr. Vandenburg, has kindly furnished me with a list of forty-four patients treated by him for alcoholism. On examining the notes carefully I find that twenty-five of them had ancestors, or, at any rate, relatives who drank. Of ten of them there was no previous history obtainable. These, very likely, ought to be added to the twenty-five, as it appeared from certain signs that they merely did not wish to expose their family histories.

It is a curious but very general fact, that there exists a sort of instinctive tendency in the members of a family to hide from others as well as from themselves anything that would tell of the defect by a faulty nervous inheritance—I mean an inheritance of defects in the central nervous system. Men do not like to acknowledge the controlling influence of such a fate, and they often instinctively take pains to refer diseases that are unmistakably inherited to very ordinary, accidental, and always different causes. To try to obtain information in such matters from family-members is too frequently a fruitless undertaking. They will often throw impediments in one's way, even leading one into wrong paths; and yet to make a proper diagnosis and prognosis in nervous diseases one must try to learn not only the history of his patient, but also the diseases that are prominent in his family.

But to return to my Vandenburg statistics: four mothers and sisters were tuberculous; one has a father who is very nervous, and smokes incessantly; one has an asthmatic grandfather. Only three have a family record that seems free from all defects. Eleven of them showed tuberculosis or some other lung-difficulty in their families; one had insanity on the mother's side, and of one the father's sister was insane; of one, the uncle and aunt on the father's side were insane; and one had insanity in two aunts on the father's side. There was insanity in the father of one, induced by drink, and in one instance the paternal grandfather drank heavily, the father moderately. In one case the paternal grandfather drank hard and died of apoplexy; the great grandmother was tuberculous and the mother paralytic. In four instances the grandfathers drank heavily, though the fathers were free from the vice.

All of these researches only point the more strongly to the importance of ascertaining the best methods, if there exist any, to check the disease and its ravages.

The establishment of a so-called Keeley Institute in the village in which I reside has brought to my mind with more than common emphasis the subject of treatment of alcoholism, craze for drink, or dipsomania.

It is to be deplored that the State has not created special laws for the legal commitment of drunkards, and erected suitable institutions in which these unfortunates could be confined, treated, and kept not only until well of a debauch, but until their will-power had been reëstablished. The only institution near New York for the treatment of drunkards is not calculated to do all this. There they are simply helped over a spree and set afloat again as soon as sobered and restored to sleep and appetite. Nothing is done to keep them in an appropriate manner for improving or recreating their moral strength, which, after all, is the great point to be worked for. I have sent alcoholic habitués to the insane asylum. This, also, is not a proper place for them, and besides, one has often to strain points to bring such cases before the Commissioners in Lunacy in such a way that they will allow them to be received in an asylum for the insane.

The Keeley system, which I have had much opportunity to observe, has something in it which none of the formerly established systems has ever shown. It tries to reach the mind, and hence to establish on a new basis the dethroned will-power. This is done first of all by an appeal to the patient's honor; and the great success which in the beginning seemed to follow this method of cure was unquestionably due to the fact that the majority of the earliest patients were of the very best class, men willing and anxious to be cured, and whose intelligence was of the better and best type. These patients helped themselves by their desire to be helped. Then there existed a sort of brotherhood among them—a feeling of kindliest interest in each other's improvement. A later arrival, on expressing himself still miserable after a few days' treatment, was strengthened by older patients saying, "It was so with me too, but a few days more will help you." Then, sure enough, in a few days the later arrival would all at once say to himself, "Well, I see these others gave up alcohol; I can do so, too," and he does, and every day carries him farther away from the beverage, and leaves him feeling better and better.

Now, although his mind cured him, he being impressed with the idea that some secret, subtle means has been used to produce this beneficial work, cherishes a growing belief in the marvellous effects of it.

It goes without saying that I by no means advocate the manner of secrecy in which the Keeley system is practised. It is wonderful, nevertheless, to note the many successful cures made by it. What helps to increase in the eyes of the public this success is the ingenious way in which Mr. Keeley himself dismisses his cured patients, or graduates, as he strangely misnames them. Every evening—such is the practice at Dwight—every evening the graduates of that day are requested to step into Mr. Keeley's private office before departing, to receive his final lecture. There he tells them: "Now, gentlemen, remember, I have filled your bodies with a poison inimical to alcohol. If in the next four weeks you return to your old practice of drinking it, this poison which I have introduced into your bodies will kill you by meeting alcohol within you. If you abstain for four weeks, but begin to digress from your present abstemious life, after the fourth week the same poison will make you seriously ill." This is an ingenious plan to make his cases tell on the community, for the patients after their return to their respective homes will be closely watched at first by the people around them; but four weeks escape, and no relapse into dissolute habits takes place. Interest begins to flag, a four-weeks' wonder becomes tiresome, or is no more noticed after another four weeks of continued steadfastness. The best impression is thus left on the minds of the people as regards the Keeley treatment, and Mr. Keeley's clever parting lecture has brought forth the desired fruit.

The great object of my address to you is to rouse this Society into action, to take steps to petition the Legislature to pass the laws I have alluded to, and to vote money for the erection of a building dedicated solely to the restoration of drunkards. How this restoration could be effected, there is no need of bringing plans forward, no matter how long and well matured, until a movement in the direction named has been crowned with success. I feel very strongly on the subject. The compassionate sympathy the condition of drunkards calls forth should impel all of us to forward so good a work as I propose. To institute establishments of this kind will be in the end of immense benefit to the public treasury. Only reflect on the labor power saved by it for the Commonwealth! The skilful mechanic (how often is not the best given over to drink) will be restored to his family, perfectly confident again, and willing to be the breadwinner as of yore.

The unfortunate who, during a crazy spree, has threatened perhaps the lives of people, will no longer go to jail to expiate a sentence in complete idleness, but will speedily be cured of his debauch, and at once resume on remunerative labor in one of these institutions.

It is sad to watch our present system. I will give you just one experience of mine.

A few months ago a prisoner was brought into our jail in a most terrible condition—crazed by drink, with his face beaten into a pulp during self-provoked rows, unwilling to be controlled in any way. The attending physician found him chained close to the floor of the cell, as dangerous and violent as a wild beast. A hypodermatic injection of morphine restored him to his former quiet, and he was soon brought before the court and sentenced to a certain term of imprisonment in the county jail. When the time of his release drew near the judge who had sentenced him requested me to examine him as to his mental condition, for he feared the man was insane, his behavior during his trial having so impressed him. I visited him at once, and found him a most intelligent, wide-awake man, who only a year ago had given himself up to drink, and had ever since lived in constant alcoholic excitement. Deprived of drink, he had perfectly recovered, and felt ashamed of his condition. The jail was not only not the place for him, but it was most detrimental to his moral condition. Thrown into close contact there with criminals of all shades, while his mind was still weakened from the long-continued excessive use of alcohol, the danger

became most imminent that the former drunkard would become a future criminal.

There are people who have no patience with drunkards, just as there are those great masterpieces of virtue who cannot understand how one can ever be led by passion's wild demands from the straight and practical road, whose every step is well calculated beforehand and arranged in an undeviating routine system. But such people are possessed of natures that *cannot* be tempted—cold and self-contained individuals, their virtues are to my mind no virtues at all, for they have never to sustain an onslaught of the evil one. To them I do not turn for coöperative sympathy, but to those scarred in many a battle, won or lost. And it is scarcely necessary that I should portray for such the many ways in which excellent men or women may become almost unconsciously enslaved by alcohol.

Look around you, and see how many homes have been destroyed; how much happiness undermined; how much of grief planted in the hearts of men and women by the unfortunate victims of alcoholic excess, and then you will join in doing this great work in which my whole heart's energies are enlisted.

REPORT OF OPERATIONS UPON HERNIAS.

BY CHARLES S. HAMILTON, A.M., M.D,
OF COLUMBUS, OHIO;
PROFESSOR OF THE PRINCIPLES OF SURGERY, STARLING MEDICAL COLLEGE, AND LECTURER ON CLINICAL SURGERY, MT. CARMEL HOSPITAL.

STRANGULATED HERNIA.

THE operative treatment of strangulated hernia affords one of the best illustrations of the diminished mortality attending surgical procedures since the introduction of antisepsis. If necessary, the sac may be opened with comparatively slight risk of peritoneal infection; and in the majority of instances this step is advantageous, if it is not absolutely necessary. The era of cleanliness in surgery has produced another striking change. The operation is not feared as it was formerly, and on this account is advised at a much earlier period, instead of being regarded as a *dernier ressort*. It is no longer justifiable to resort to prolonged taxis, which may result in additional traumatism to the already inflamed and softened intestine. The unrecorded history of strangulated hernia would doubtless furnish many examples of reduction *en masse*, rupture of gut, and similar catastrophes from long-continued efforts to reduce. The present attitude of the profession might be expressed thus:

So soon as the diagnosis is made, resort to anesthesia with intelligent and gentle taxis for ten minutes, unless it be contra-indicated by stercoraceous vomiting or gangrene. If taxis fail, the anesthetic should be continued and the operation performed at once.

The following group of cases is reported, not with a view to the maintenance of any special method of operating, but in order to record experience in a very interesting and practical branch of surgery:

CASE I.—Mrs. R. J. F., of Columbus, aged seventy-four, had had a small irreducible femoral hernia for five years. On June 23, 1890, while the patient was straining at stool, the protrusion suddenly enlarged. Severe pain was immediately felt in the lower abdomen, and vomiting occurred. During the next few days attempts were made to return the viscus. At midnight on the 25th she was referred to me for operation. At that time she was vomiting occasionally, and there had been no movement of the bowels for three days. Her pulse was 114 and irregular. Her arteries were evidently in a state of calcareous degeneration. Ether was given by Dr. Dennison, and the operation rapidly completed. On opening the sac some blood-stained serum escaped, and a mass of adherent omentum was removed after ligation with strong silk. Partly surrounded by the omentum was a knuckle of small intestine, dark red in color, and with swollen walls; incision of Gimbernat's ligament was necessary in order to return it to the abdominal cavity. The sac was ligated and removed. The patient's convalescence was uneventful in spite of her advanced years and feeble condition. She was discharged from the hospital in four weeks. Hernia eventually returned, but is controlled by a truss, and now causes her no annoyance.

CASE II.—J. McW., of Marion, twenty-three years old, had had an irreducible femoral hernia for two years. On the morning of January 31, 1891, a violent muscular effort was followed by pain at the site of the protrusion and increase in its size. Vomiting commenced at once, and was continued until the evening of February 1st, when I first saw the patient. Dr. L. D. Hamilton, of Marion, had unsuccessfully attempted to reduce under chloroform. The patient's pulse was 115; he was vomiting frequently, and was tympanitic. Under ether, reduction was again attempted, but without success. The usual incision was then made over the length of the tumor, and the sac freely opened. Adherent omentum was ligated and removed, after which a slight incision in Poupart's ligament permitted the return of the discolored small intestine. The peritoneal sac was cut off as near the ring as possible, and the wound closed. The recovery was rapid. The hernia has recurred, but a water-pad truss prevents its descent.

CASE III.—A. D., of Lily Chapel, fifteen years of age, had an undescended testicle in the right inguinal canal. Early in the morning of January 29, 1891, while lifting a heavy basket of corn, he suddenly felt a sharp pain in the groin. During the day he walked five miles. At night the pain became more severe, with vomiting and abdominal distention. Dr. Jewett and Dr. Beach, of West

Jefferson, were summoned, and found an obscurely fluctuating lump in close relation with the retained testicle. Taxis, with the aid of morphine and chloroform, was attempted without success. At daylight on the 31st I found the boy with an irregular pulse of 124, vomiting matter of a slightly fecal odor, tympanitic, and suffering the usual paroxysmal pain between the umbilicus and pubes. There had been no action of the bowels since the 27th. I at once operated. The sac occupied the inguinal canal, and was distended with an ounce and a half of blood-stained serum. In order to expose it, the aponeurosis of the external oblique was freely incised. The testicle was apparently normal. A swollen loop of intestine, nearly five inches in length, and of a red-brown color, was the strangulated viscus, being constricted by the sharp margin of the internal ring. After incision of the ring, and consequent relief to its circulation, the intestine began to recover a more normal appearance, and was returned to the abdominal cavity. At this stage of the operation the patient's circulation became depressed. Free stimulation was resorted to, and the wound was closed after accurate stitching of the divided aponeurosis, no attempt being made to bring the testicle down to its proper location.

After the reduction of the intestine, about six ounces of clear fluid escaped from the abdominal cavity. Notwithstanding the hasty termination of the operation, the patient recovered promptly, passing flatus on the following day, and having a normal evacuation on the second day. At the present time the testicle cannot be felt, having retracted into the abdominal cavity; nor has the hernia at any time returned.

CASE IV.—Mrs. H., of Mt. Gilead, aged sixty-six, had had an irreducible femoral hernia for many years. When I was first called by Dr. Buxton, February 6, 1892, strangulation had existed for twelve hours, taxis having been ineffectual. The protrusion was oval in shape, occupying the right groin; its dimensions, three by six inches. The part was exceedingly tender, and the constant use of morphine had been necessary to control pain. The usual symptoms of strangulated hernia were found, though there had been no stercoraceous vomiting. Ether having been given by Dr. Buxton, operation followed. The sac contained some bloody serum, with a large amount of adherent omentum (the greater part of which was removed), and four inches of the dark-red colored intestine. It was necessary to nick both Gimbernat's and Poupart's ligaments in order to return the gut. After removing a portion of the sac, the remainder was tied close to the ring. Two stitches were then taken to approximate the edge of the enlarged opening, and the wound was closed. The patient recovered with a sinus leading probably to the silk ligature at the neck of the sac. There has been no return of the hernia.

CASE V.—Mrs. C., of Plain City, thirty-six years old, had had a right femoral hernia for a year and a half. It had been strangulated for thirty-eight hours, when Dr. Gardner and Dr. Howland advised operation, after failure to reduce by taxis. She had a high pulse-rate, slight tympanites, umbilical pain, but no vomiting had occurred—possibly it had been prevented by the free use of morphine which her suffering demanded. The sac contained only a knuckle of small intestine of dark-brown color, and much swollen. In this case the constriction was so tight that division without injury of the gut was a matter of some difficulty. The sac was readily excised, and the patient recovered. She is now perfectly well, and wears a truss, although the hernia has not descended since the operation, March, 1892.

CASE VI.—H. M., of Columbus, forty-two years old, had for some years worn a truss because of a right inguinal hernia. On December 17, 1891, while working without his truss, he lifted a heavy weight, and felt something give way in the groin. Intense abdominal pain soon followed, with the symptoms of strangulated hernia. During the day his physician, Dr. Dumm, made efforts at reduction under an anesthetic, but without success. At 10 P.M., the patient was brought to Mt. Carmel Hospital for operation. An incision was made from the region of the internal ring well down to the bottom of the scrotum, as the tumor was very large. A considerable amount of turbid serum escaped from the sac, which contained omentum with fourteen inches of small intestine. The constriction was located at the internal ring. A portion of the omentum was removed, and the intestine carefully examined. Its walls were greatly swollen, and it was almost black in color. The constriction was divided, and the intestine wrapped in warm cloths. Before many minutes there were signs of resumption of circulation, as shown by change of color, and it was then decided to return the gut to the abdomen. It was a question in the mind of the operator at this time whether it would recover its integrity. As usual, the sac was removed and the wound closed.

The following evening the patient's bowels moved freely, and his condition was good until the 23d, when it became necessary to give him morphine occasionally on account of abdominal pain. On the 27th a small fistula formed in the upper part of the incision. From this date until his discharge, on January 15th, he was subject to attacks of pain in the right inguinal region, and after returning to his home he acquired the morphine-habit. Before leaving the hospital, abdominal section, with correction of any faulty condition that might be found, was advised, but his consent could not be obtained.

This man died eight months after operation. The fistula had nearly closed, but the combined effects of fistula and opium, with a constitution impaired by excesses, carried him off.

It is possible that after its return to the abdomen, the strangulated and inflamed intestine became adherent to surrounding structures in such a manner as to narrow its caliber, and that thus it continued to act as a partial obstruction to the passage of intestinal contents. A secondary operation, if permitted at an early date, might have permanently relieved him.

CASE VII.—Mrs. J. D. E., of Columbus, aged

sixty-five, was seized with severe abdominal pain and vomiting on the morning of April 13, 1892, while making some unusual muscular effort. Dr. Coleman saw her on the following day, and found the symptoms of strangulated hernia, with a small, painful tumor in the left groin. The patient had had no rupture until the time of this attack. The taxis having failed, at 6 P. M., on the 15th, operation was performed without difficulty, the hernia being femoral, and containing small intestine with omentum. The recovery of the patient was retarded by intercurrent disease. There has been no return of the protrusion.

RADICAL CURE.

CASE I.—W. E. of Moxahala, twenty-five years of age, had an undescended testicle, with incomplete hernia in the right inguinal canal. The testicle was so sensitive that no truss could be worn; the hernia was growing larger and causing much annoyance. Operation was carried out at Mt. Carmel Hospital, June 15, 1889. The testis was atrophied, and hence removed. The sac was then dissected free from its connections, and McBurney's operation for radical cure completed. The wound healed rapidly, and the patient was discharged a month later. He writes that he has had no recurrence, and does not wear a truss, although he has been advised to do so.

CASE II.—Mrs. K. S , Columbus, aged fifty-two, had had a right inguinal hernia for thirteen years. For a somewhat shorter period irreducible umbilical hernia had also existed. She was a large, fleshy woman, the mother of six children. The protrusion in the groin was fourteen inches in length, and four in diameter, and could not be restrained by a truss. It frequently became incarcerated, and required taxis, with prolonged rest in bed, to effect reduction. McBurney's operation was advised by Dr. Lippit, and performed by the writer in June, 1890, followed for the time being by cure. The patient was advised to wear a truss in order to prevent a relapse, but failed to do so. Within the last two months there has been some sign of recurrence.

It is interesting to note that the umbilical hernia became larger after the operation, and has remained so up to the present time.

CASE III.—Mrs. H. L., of Lancaster, aged fifty-four, underwent operation in February, 1890, for the cure of umbilical hernia of twenty years' standing. The rupture was reducible, the aperture being half an inch in diameter. Operation was advised for relief of distressing gastro-intestinal symptoms incident to the hernia. After removing adherent omentum, and a return of the large intestine to the abdominal cavity, the sac was ligated and cut off short as possible. The edges of the ring were then approximated by a purse-string suture of strong catgut. Additional wire sutures were inserted to relieve tension on the catgut during the healing process. The patient was discharged in five weeks, and the rupture has not returned.

In all of these operations the usual antiseptic precautions were observed. Whenever the condition of the patient permitted, radical cure of the hernia as well as relief of strangulation was sought. The favorable results may be attributed largely to the promptness with which, in the several cases, the general practitioners recognized the condition and urged surgical interference to prevent an otherwise fatal issue.

Operations for the radical cure of hernia are only indicated in special cases, because, as a rule, the cure is not permanent from any of the generally recognized methods.

The following conditions would seem to justify its performance:

1. When the hernia is irreducible and painful.
2. When the hernia is very large, and cannot be controlled by a truss.
3. When the neck is so small that there is constant danger of strangulation.

In all cases a truss should be worn after operation in order to prevent relapse.

THE REASON WHY THE NECK OF THE FEMUR DOES NOT BREAK.

BY BENJAMIN T. SHIMWELL, M.D.,
ADJUNCT PROFESSOR OF OPERATIVE SURGERY, MEDICO-CHIRURGICAL COLLEGE, PHILADELPHIA, PA.

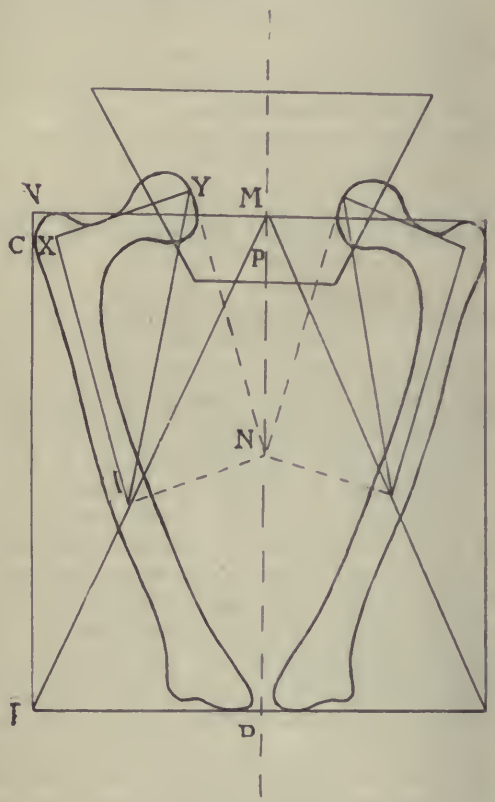
THE clinical study of fractures of the femur due to indirect violence shows a preponderance of breakage within a given area. When we look at the femur as a whole, we are impressed with the idea that the part that would appear most liable to suffer this accident is the neck. The distance of the head from the shaft, by its obtuse angle, would, at the first glance, lead us to suppose this to be the weakest point. But Nature has recognized this, and has made every effort to strengthen it. The arrangement of columns of osseous tissue gives unusual support, and lessens the violence of shock. This arrangement has been accepted as the reason why fractures are not common at the neck. When fractures occur at this point they are confined principally to the declining stage of life, and even then this is, no doubt, due to osseous degeneration and consequent change.

Granting that every provision has been made to strengthen the neck, can we, on careful examination of the femur, say that it is in any other and better manner enabled to hold the trunk? Will not a tubular column stand more direct pressure than any mechanical apparatus constructed on the same principle as the neck of the femur, providing the same comparative size is maintained?

Nature has made no part of the economy by chance. Perfection was reached by means extending over long ages. The very angle which the neck of the femur takes is the keynote in the argument against itself as a factor, as far as strength is

concerned. It is on the ground that all parts of the body are based on definite and distinct laws that I propose to demonstrate by a problem in mathematics that fractures of the femur taking place in the shaft, and not in the neck, are governed by distinctive laws. It is not so much a question of the strength of any part of the bone as it is that of the impact of forces at a given spot.

An examination of the annexed figure shows the presence of two major rectangles and four right-angled triangles, and two minor rectangles and four right-angled triangles. One side of the major rectangles is made by the line of the center of



gravity. The base is formed by a horizontal line extending from great trochanter to great trochanter; then another line is dropped from the outer side of the great trochanters, parallel with the line passing vertically through the center of gravity. These are joined by a horizontal line, parallel with the base, through the knee-joints. This gives the two major rectangles. Then starting at M we carry a line to F, which divides the rectangle into two right-angled triangles. If we now draw a line through the center (Y) of the head of the femur, we find that it strikes the shaft of the femur on a level with the neck at its junction with the shaft (X). This line is carried to the center of the axis of the femur, and then down its length to the point of bisection of the femur, I, made by the hypothenuse of the major right-angled triangle. Then carry a line parallel with the base to N, which strikes the center of gravity, one of the sides of the major rectangles, then up to Y, parallel with X I, and we have a rectangle similar to either of the major rectangles. Then a line drawn from Y to I gives the hypothenuse of two right-angled triangles, both similar to the major right-angled triangles.

The value of the figure lies in the modification of the force of impact by the presence of certain definite laws.

The patient falls either on feet or knees, the force in the illustration being a combination of the weight of the body and the resistance of the object struck. A force travelling to the center of gravity would be the sum of the weight of the body and the resistance of the object, and therefore the impact at the base would be as the sum; consequently the neck of the femur would break, but the presence of the hypothenuse of the major right-angled triangles meeting at the base modifies the impact according to the rule that governs force applied obliquely. In the present case the force is applied in the direction F P, under the angle F P C, against the surface M V. Resolve F P into F C perpendicular to M V, and F D parallel with it, then F C will be the absolute effect of the force, and F P — F C is the loss. To prove the value of this, which applies to the body as a whole, the presence of the same angle in the minor triangle, in which the force is I Y, demonstrates it when applied to the femur proper; consequently, instead of the neck of the femur having to resist the whole force, it is modified, and the explosion or resultant takes place at another point.

The place of explosion is proved by the law: "Two forces not parallel, and applied at different points, may have a resultant, if they lie in the same plane. It is found by extending the lines of direction until they intersect."

The hypothenuse F P of the major right-angled triangle, by the direction of the force, is applied at the center of the base-line M. This is the force applied to the body as a whole. The point of application of the force in the minor angle is at the head of the femur. These forces are not parallel, but on the same plane, the point of application being different. Therefore, the line of the minor triangles, Y I, intersects the line of the major triangles, F P, at the middle of the femur; consequently, the resultant of the force is at this point, and the femur breaks at or about the middle of the shaft.

1253 S. SEVENTEENTH STREET.

OF 1837 cases of cholera among the workmen employed in the breweries of Hamburg, Altona, and Wandsbeck, there were but two deaths—a percentage of 0.12.

A NEW MEASUREMENT IN THE STUDY OF FEVER.

BY LOUIS F. BISHOP, A.M., M.D.,
OF NEW YORK.

IT has occurred to me that in the mensuration of fever we are deficient in terms. Since the beginning of medicine the duration of fever has been observed. More recently we have come to measure its height. It still remains for us to obtain a unit to record duration and height, when considered together.

Not long ago electricians were confronted in a similar way by the need of a unit to express current.

They said empirically that the current produced by one volt against a resistance of one ohm, should be called an "ampère."

In like manner, let us say that the amount of febrile disturbance produced by an elevation of the temperature of the body one degree for one hour, shall be called an "hour-degree."

Thus we have a unit in terms of which we can express the duration and height of any febrile movement.

In the usual graphic method of recording temperature, by means of a curved line upon a chart, if the height of the curve above the normal line represent the elevation of temperature, and the horizontal distance travelled by the curve represent the progress of time, then the area of the chart included between the curved line and the normal line will represent the number of hour-degrees of fever to which the patient has been subjected. Thus an elevation of temperature of one degree for twenty-four hours equals twenty-four hour-degrees. An elevation of two degrees for fourteen hours equals twenty-eight hour-degrees. An average elevation of three degrees for three weeks equals 1512 hour-degrees. If, during twenty-four hours, the temperature fall regularly from an elevation of two degrees to normal, the patient has suffered twenty-four hour-degrees. If the idea be clear, there can be no advantage in multiplying examples.

I am confident that this new quantity, when taken in conjunction with the records already in use, will be of material assistance in the study of cases of fever and of their treatment.

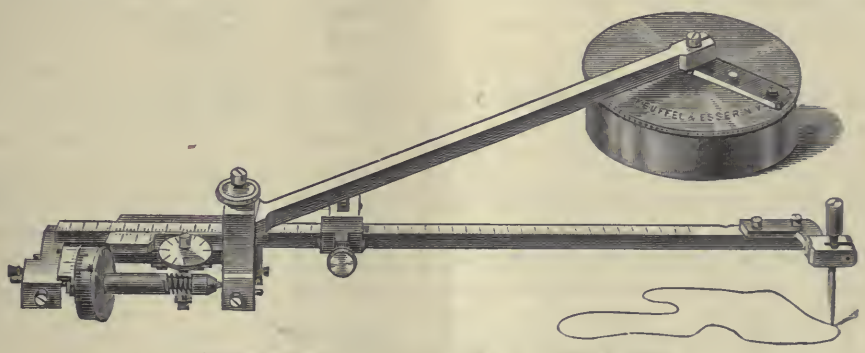
The estimation of the number of hour-degrees represented by a fever-chart offers inherent difficulties. The mensuration of so crooked a figure may well appal the unmathematical physician.

I have devised an approximative method.

In every temperature-chart the printed squares have a definite value in hour-degrees equal to the number of hours apart of the perpendicular lines multiplied by the number (usually a fraction) of degrees apart of the horizontal lines.

Rule: Count the number of whole squares included in the fever-area, and add half the number of squares only partially included. Multiply this number by the value in hour-degrees of one square, and the result will be (approximately) the number of hour-degrees represented by the curve.

A much better method is by the use of an instrument which was brought to my notice by Mr. John A. Roebling, C.E., of New Jersey. The polar planimeter is an instrument used by engineers to measure the area of any figure, no matter how irregular. The instrument is shown in the accompanying illustration.



Polar planimeter. (Copyright, 1887, by Keuffel & Esser.)

The chart being placed upon a flat surface, the needle is passed over the circumference of the figure, and the area is read directly from the instrument in square inches, or for whatever unit the instrument has been set. Having the area of the figure, it is an easy matter to reduce it to hour-degrees. In this way all the charts of a long case can be measured, and the total taken at one reading from the instrument. The value of our results will depend upon the accuracy of our charts. To obtain a curve of much value the temperature should be taken every four hours.

This estimation of the total amount of fever will be of especial value in checking the undue statistical value given to cases with high maximum temperatures which are often due to unimportant causes.

Though the application of this method is chiefly

to the study and comparison of series of cases of which careful charts have been kept, it has an immediate lesson for every-day work.

In any febrile disease the comparison of the number of hour-degrees, from day to day, will convey a much clearer idea of the progress of the case than the mere inspection of a chart, or perhaps of a list of numbers.

After all, the importance of the matter is to bear in mind, from day to day, not only the present condition of our patient, but also what he has already endured.

A procedure which would be proper and useful to a patient in the latter part of an attack of enteric fever, who had endured 1000 hour-degrees, might be fatal to one who had endured twice as many.

Let us, then, consider not only the degrees, but also the hour-degrees; not only the fever-height, but also the fever-area; not only the quality, but also the quantity of the fever.

36 WEST THIRTY-FIFTH STREET.

ANALYTIC NOTES ON LIQUID MALT-EXTRACTS.

BY HENRY LEFFMANN, M.D.,
OF PHILADELPHIA.

FROM brief notices in recently-issued text-books as to the employment of malt-extracts, it appears that the leading therapeutists are not favorably impressed with their usefulness. Nevertheless, if one may judge by the variety of brands now in the market, and by the extensive displays occasionally seen in the show-windows of drug-stores, it must be inferred that either physicians are very liberal in prescribing these preparations or the public has acquired a strong tendency to their use.

It seems advisable, therefore, to make some comparative analytic determinations and some inquiry as to how far any useful physiologic effect may be obtained from them. The primary motive leading to their employment is doubtless to secure the starch-digesting power which is active in malt, due, as is well known, to the enzyme diastase. This body is, however, somewhat sensitive to chemical influences. Its activity is quickly destroyed at certain temperatures, and suspended, if not destroyed, by many substances of the antiseptic class.

It has not been deemed necessary to include in the examination the solid or semi-fluid extracts. These possess diastatic power, are free from objectionable ingredients, such as alcohol or salicylic acid, and by their very nature are not likely to be used except under medical advice. The extracts prepared by the Maltine Co., Parke, Davis & Co., and the Trommer Malt Co. possess decided starch-converting power, and evidently contain notable amounts of diastase. The liquid extracts are mostly alcoholic, so that there is a factor in their use that has sanitary as well as medical importance.

The following samples represent, I believe, the principal brands of liquid malt-extracts sold in Philadelphia. They were obtained for me by a retail drug-house of excellent standing, and were all in unbroken packages, in good condition. I learn that at least one of the larger breweries makes a malt-extract which is furnished to retail druggists in quantity, with a label bearing the druggist's name. I have designated this as "Trade" extract (No. 13). It apparently finds considerable sale.

No.	Brand.	Claims.	Alcohol.	Solid ext grms. to 100 c c.	Salicylic acid.	Diastatic effect.
1	Blair's	No alcohol	None	16.06	None	None.
2	Evans's	Less than 4 per cent. alcohol	3 per ct.	5.35	"	"
3	Dukehart's	No alcohol	Present	25.22	Present	"
4	Genois's	Less than 4 per cent. alcohol	6 per ct.	15.4	None	"
5	Wyeth's	Less than 3 per cent. alcohol	2.98 p. ct.	14 1	"	"
6	Malt-Hopine	.....	Present	8.97	Present	"
7	Hercules	.....	"	10.23	None	"
8	English	Rich in extractive	"	5.24	"	"
9	Wampole's	A trifle over 4 per cent. of alcohol.	7.7 per ct.	12.89	"	"
10	Standard	Absolutely free from alcohol	3 per ct.	9.58	"	"
11	Tarrant's	.....	Present	10.24	Present	"
12	Johann Hoff's	.....	"	8.44	None	"
13	"Trade"	Highest per cent. of extract and lowest of alcohol of any malt extract in use.	3 per ct.	5.1	"	"

The foregoing table does not require much comment. It shows that in three of the brands, Dukehart's, Malt-Hopine, and Tarrant's, a most objectionable ingredient, salicylic acid, is present. This substance, apart from the fact that the commercial article is decidedly poisonous by reason of impurities, is especially objectionable in a malt-extract, for it interferes with several of the digestive ferments. Three of the brands, Blair's, Dukehart's, and Standard, make a special claim for freedom from alcohol, but only the first-named justifies this claim. The claim for richness in extract is seen also to be not substantiated in the two cases, English and "Trade," in which it is made.

As might be expected, no diastatic power was observed in any of the samples. For an exact determination of relative diastatic power it is necessary to make conversions under strictly analogous conditions, in the presence of excess of starch, and measure the sugar formed; but for the determination merely of the presence or absence of active diastase

a qualitative test suffices. It was found that with each of the liquid extracts several hours' action at a moderate temperature was insufficient to convert even very small amounts of starch. In some instances measurements were made of the sugar, and it was found that none was formed by the action on starch, the Fehling figure for the liquid after treatment with starch being the same as that before treatment. As in the case of one of the samples, "Standard," such positive claim is made—the advertisement stating that it is "absolutely free from alcohol"—two samples were tested, and alcohol was found in both.

It is apparent from the foregoing assays that the liquid malt-extracts are mostly beers, that they have but little if any value as either food or digestives, and that several of them are positively injurious. It is a fitting commentary on the situation to note that of two most distinguished American authorities on therapeutics, one recommends that malt-extracts should be given before meals and the other that they should be used after meals. It is worth while noting that as substitutes for beer these extracts are not economical.

CLINICAL LESSONS.

HYSTERIA; PSYCHIC ANÆSTHESIA FOR TOUCH; PSYCHIC ANOSMIA; PSYCHIC BLINDNESS IN ITS VARIATIONS, WITH COMMENTS.

Clinical Lessons:
Infirmary for Nervous Diseases of the Orthopædic Hospital.

BY S. WEIR MITCHELL, M.D.,
OF PHILADELPHIA.

[Reported by CHARLES W. BURR, M.D.]

HAVING been struck by the vast mass of interesting and illustrative or strange cases which pass under my eyes at this service and are lost in our gathering note-books, I have made arrangements to utilize a part of them for a larger audience. You are aware that the out-service in this hospital is carried on by the physicians-in-chief, and the care and method of it must, I think, impress one familiar with out-services as somewhat unusual. It has enabled us in the past to produce the many remarkable studies that have become associated with this comparatively small hospital. I need only remind you of the essays of Morris J. Lewis, on Chorea; of Sinkler, on the Palsies of Childhood; of Osler, on the Cerebral Palsies of Children; and of Hinsdale, on Station in Health and Disease.

We have shown, too, that even in hospital-wards the *Rest-treatment* is possible for the poor, and the statistics of such therapeusis, with the singular success that has attended it, would be valuable. I feel glad to say, indeed, that while the papers named, and a host of others, illustrate the careful scientific use made of our wards and laboratory, we never lose sight of the first object of these wards—the cure of disease.

These lessons, therefore, will deal not alone with the many singular cases which are likely to come before us, but also with the therapeutic methods that were (at least some of them) in use here before they were thought possible in hospitals, or that, as I think, are better applied and better known within these walls than outside of them. I have no intention of lecturing at length as to the cases we see, or at least I shall rarely so indulge myself.

The first case I ask you to look at to-day is from Scott ward. Watch her as she enters. Her self-conscious, fixed facies will, or should, strike you. Note her ways. At one moment she seems blind; at the next, she moves with swift ease. Her case is full of these oppositions. I read it, and all of it, now, before her, as she is as to it exceedingly intelligent, and will set us right if we err. Dr. Pershing, of Denver, has greatly helped us as to the early history, and saw with clearness of medical judgment into the true nature of this unusually instructive case, which, owing to its changeful features, has greatly puzzled me. I have now reached conclusions which carry my clear comprehension of the case up to a point beyond which the case itself does not sufficiently yield clinical material for a further advance.

B. L., a woman, forty-two years old, married, applied for treatment October, 1892, complaining of blindness.

Family history. Her mother's father was paralyzed. One of her mother's brothers had hydrocephalus, and was epileptic and blind for a year and a half before his death from typhoid fever when twenty-seven years old. Her father died of pulmonary tuberculosis. One sister died of some spinal disease, said to have been caused by a fall three and a half years previously.

Personal history. The patient has two living healthy children; two others died. She has had five abortions. She does not use alcohol. There is no evidence of syphilis. There never was any serious illness except typhoid fever at the age of fourteen years. For many years the woman has heen greatly troubled by family matters, and especially in consequence of a child's death.

The *present trouble* began in 1887. Soon after a miscarriage she found that it was becoming difficult for her to recognize large objects, while small ones could be seen easily. In reading, she was compelled at last to spell each word, because she could see only one letter at a time. She was fitted with glasses, but no relief followed their use. As time passed, vision grew worse. As the form-fields narrowed she recognized persons, not by their faces, but by their clothing and general bearing. She could see a small piece of silk or a pin upon the floor, but could not recognize large objects.

During the second year she lost, to a great degree, the power of recognizing colors. She could walk perfectly well, and avoided obstacles. During the third year she could still see small objects, but could not tell whether or not a house was completely built, or distinguish a man from a horse. In the fourth year she began to strike against objects in walking, and everything appeared black. She could distinguish between night and day, and even between a bright and a dim light.

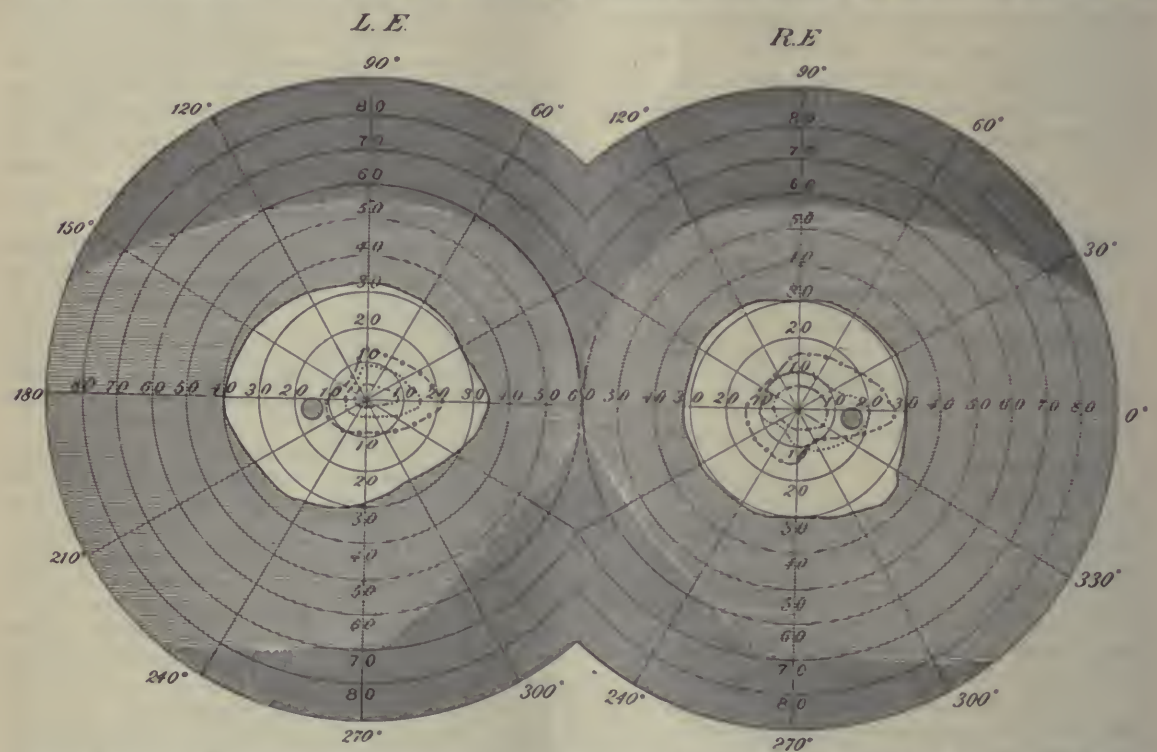
In December, 1891, she was examined and treated by Dr. Howell T. Pershing, of Denver, who has kindly sent us the following additional notes: "She is sent to me as being perfectly blind. Lately she has lost command of words and finds it difficult to carry on a conversation, because words do not come to her mind, and are not understood when heard, though she can readily repeat

them. Recently something was said about a dust-pan and brush. She repeated the words, but had no idea of what they meant until she handled the objects, when the idea came back. She complains of inability to perform the simplest arithmetical operations (but this is inconstant), and also to recognize by touch familiar objects of dress, such as a belt. She consulted Dr. Starr and Dr. Roosa, of New York, in November, 1890. She could not name colors for Dr. Roosa, but a few days later sorted worsteds correctly for Dr. Charles H. Thomas, of Philadelphia,

"*Status præsens.* She recognizes the difference between light and darkness. She cannot count fingers or the windows in the room. The pupils are equal and each reacts to light falling only on the other eye. The ophthalmoscopic appearances are normal. An interrupted galvanic current of one milliampère applied to either side of either eyeball gives a distinct subjective flash. The examination of the other special senses, in all their forms, general sensibility, motion, and the reflexes, shows nothing abnormal. She is not led, and in going out of a room finds the door-knob without feeling for it, though not always. She improved under treatment by massage, electricity, iron, quinine, and strychnine, and moral means. Just before leaving the hospital she told me that she had thought she was totally blind, but she knew now that she could not possibly have been so, because she was in the habit of doing many things for which sight was absolutely necessary. This statement was volunteered as the result of her own reflection. After careful study of the case I was certain it was hysterical." (The accompanying diagrams show the fields of vision taken by Dr. Pershing.)

The improvement in her condition that took place while in Dr. Pershing's care soon disappeared under the stress of family trouble.

Present state (October, 1892). The face, when at rest, is vacant and expressionless. The woman moves about the room with apparent ease, and rarely stumbles against an object. While her gait is not that of a blind person, it also is not that of one with normal vision. When any object is put before her eyes she says she cannot tell what it is. On being told to cross the room and speak to a gentleman standing there, she goes in the proper direction, but is greatly surprised to find, on hearing the supposed man speak, that it is a woman. When a watch is given her and she is asked to tell what it is by touch, she fails. If, however, it is put near enough to her ear for her to hear the ticking, she names it immediately. She fails to recognize a clothes-brush by touch, but when she hears me use it, says: "It is what you brush clothes with—a clothes-brush." The same is true of a finger-brush, except that she calls it a hair-brush. She cannot at first recognize a key by touch, but on being told that it has to do with a door, says, rather doubtingly, "It is a door—door-knob," and then quickly corrects herself, saying, "No, it is a door-key." She fails entirely to recognize a knife by touch. On being given a pencil she calls it a penknife, and adds, "It is what you write with," and does not seem to be aware of her error. At one examination she was entirely unable to tell coins or even to recognize that they were metal, but the next day she recognized a five-cent piece after considerable difficulty, and then quickly told quarters, halves, and dollars. She could not, however, distinguish between a one-cent and a five-cent piece.



Diagrams illustrating the contraction of fields of vision. The continuous line indicates the extent of the form-field in this patient, the broken lines that of the color-fields—blue, red, and green—in the order named. The test-papers were 2 c.m. square.

A pen-holder, with pen attached, she calls a pen. A plate she names properly, but calls a tumbler first a plate, then a bowl, and finally a tumbler. A pin, a needle, a book, a pair of scissors, and a piece of paper she knows instantly by touch, but sometimes not at all. She says that a ball put in her hand is round. when asked its shape, and recognizes a piece of cardboard cut in the form of a circle. She calls a triangular card three-cornered, but all rectangular cards are to her square. An oval she sometimes calls square, sometimes round. After being told several times what an object put in her hands is, she remembers it and answers correctly several days later.

The sense of contact is perfect. There is no anæsthesia. She immediately responds when touched, and can tell the point of a pin from the head, always answering properly "dull" or "sharp." She cannot, however, localize sensation, so as to name the fingers, but can put a finger correctly on the place touched. The pain-sense is normal. The temperature-sense is normal.

If salt or sugar be put upon the tongue, she names the former and says the latter is sweet like candy or sugar, and taste seems to be as to even more delicate flavors normal. Given benzine, cologne, alcohol, and oil of turpentine to smell she claims to recognize them as different, but cannot name them. She says they are unlike. She can write her initials and the first part of her surname fairly well, the latter part being a scrawl. She cannot, however, write any isolated letters except o and c. She describes the latter as o with a piece cut out. If her hand be guided in making letters, she still fails to recognize them. She cannot even write the letters of her name unless she begins at the beginning.

What may be called spontaneous speech—I mean the speech of ordinary conversation—is at the present time normal, though she claims that formerly she misused words. For example, though she may not be able to name an object when given to her, yet if she wants it she will use the proper word in asking for it. Notwithstanding her claim that she has forgotten how to spell, she spells simple words correctly. She also performs simple arithmetical problems correctly. She is nervous, depressed, and at times lachrymose.

Dr. de Schweinitz has examined her eyes and reports as follows: "There is divergent squint in the right eye. The pupils are large, reacting slowly to light; the right very sluggishly. The discs are grayish-red. The veins are full; the arteries are small—the smaller in the right eye. There is lack of fixation, but the patient sees light in all directions. The right eye open (the left closed) perceives objects to the left of the median line and sometimes in the middle, but not to the right. The left eye open (the right closed), perceives objects to the left and in the median line, but not to the right. There is partial right lateral hemianopsia. Given cards to sort, she matches blue ones correctly, but confuses red and green and all others. It was impossible to take the color-fields." All symptoms are worse during menstruation.

REMARKS.—A few preparatory words may make easier for you my after-explanations. We associate with known objects their possession of certain qualities of dimension, form, texture, color, etc. These objects are mentally classified and labelled—a pencil, a box, a hat, and so on. When, again, we see or handle one of these objects, and find by sight or touch that it possesses a group of qualities, we must determine on the label, after swift comparison with our museum of already collected complex memories of things already seen, or handled, or both.

It will help us to look at this problem in the most simple form. When we examine by sight or touch a familiar object, a single hint, as it were, may suffice, as the tick, which suggests a watch. If the object be very novel, or we puzzled, the examination as to the determinative properties and their associations and degrees may be long and difficult. We store away these acquisitions for comparison in certain cerebral centers, visual or tactile, or both.

As regards olfaction, the questions the examinative sense can ask and answer are limited. Usually, in most of the non-pungent odors, one single quality is perceived, and from it the individual reasons by comparison with past memories of scents, and declares the label he is accustomed to assign to the odor in question. This is very simple, compared to the complexity of the properties, and their variation in degree and amount, by which visual and tactile recognitions are made.

In persons who are "*mind-blind*," as Munk called it, "the thing put before them is seen, but suggests no corresponding psychical idea." Now what is here meant by being seen is one of two things, or both together. The thing seen may be present to the man as an image is to a mirror, for the mirror has no memory, and cannot compare the present with the past; or else it is meant that besides this the object so seen may present recognized qualities, but that the patient has no power to place these for comparison with those of other periods. In the one case he merely sees the object; in the other he defines its qualities. In neither case can he label the object or say what use it has, although he may occasionally do this latter, even when he cannot name it. The object may be seen, its qualities compared with older memories, its nature or use be thus known, and yet the power to label it with the vocal sign we call a word be lost.

These sets of conditions are all seen in this case at times. Thus, I blindfold the woman, and offer to her nose vinegar, cologne, asafœtida, valerian. She says they are different; does not take one for another. In other words, she does not say all alike are odors without difference. But a clear perception of the single quality so felt as different in each cannot be lodged in relation to former knowledge for comparison. Hence it has no distinctiveness and cannot be labelled.

It is interesting to study this simple case, and then that of sight. Here the partial general blindness and the added hemianoptic imperfection complicate matters, and these conditions vary from day to day. You will remember, also, that all color-sense is dead, except as to blue, and that the form-field is much contracted. Still, at times she can see the hands of a watch—not, however, so as to tell the hour. At her best moments, she may appreciate qualities sufficiently to say that one thing is larger than another, but not so as to say that this is round or square. At these times she is able to distinguish one person from another, but never to label them until they speak. In her worse ocular states, she cannot distinguish any form of qualitative difference. You will remember that

Dr. Pershing describes her as having been at one time word-deaf, as now she is word-blind.

This trouble is better known and more often seen than the yet more curious form of defect as regards touch. Remember that she can tell heat, cold, touch, pain in all degrees. Occasionally she spontaneously describes a test-object; more often she does not, and yet is able, as the stated inquiries show, to answer correctly all the queries competent to describe an object. Very often the final question, What is it? she cannot answer; or else, and rarely, says what it is for, but not its name. At other times she cannot reply as to the qualities as told by touch alone, or tell scissors from a corkscrew, a book from a watch; and yet tact is perfect. This corresponds to mind-blindness. She is mind-touchless. There is psychic anæsthesia as to touch; or, to be more accurate, either this is true or else she has lost the power of mentally comparing new sensations with the stored memories of those long acquired.

I have not spoken of the localities involved in this triple loss. As to this, our knowledge is still incomplete, and cases of hysterical representation of these singular symptoms are least of all suitable to help us. And certainly this patient is an hysterical illustration of mental incapacities to use the information won through smell, sight, and touch; and, as I am sure such cases are very rare, I have thought it worth while to state for you the reflections which it has brought to my mind. Dr. Pershing had reached a like conclusion early in the case. Of course, these cases all have alexia and agraphia. It has been suggested that the various memorial incapacities, such as the total loss of knowledge of localities or of individuals, may be limited forms of mind blindness, as if one room in the many mansions of memory were suddenly walled up and blocked; but these are, I think, yet more complex conditions of psychic disorder, and only a part of them may fairly be referred to the fount of mental trouble which this case exhibits in so many varieties. Finally we need a better term than *mind-blind*, and a good word for the corresponding condition in which touch and smell are involved.

It has seemed to me that all of these curious states of consciousness as to objects seen or felt, may be represented in the changing psychic development of a child—objects seen in early life are first represented as on a mirror; later, the qualities are defined; and lastly, these are labelled.

MEDICAL PROGRESS.

A New Operation for the Radical Cure of Hernia.—O'HARA (*British Medical Journal*, No. 1667, p. 1279) reports the employment of a new procedure in the operative treatment of hernia. After the preliminary incisions are made, and the vas deferens is freed, a long, strong carbolized gut or sterilized silk ligature is tied around the neck of the sac; a second ligature of finer material is placed about a quarter of an inch lower down, and the neck of the sac is divided between the two ligatures. The index finger of the left hand is then introduced as far as possible into the inguinal canal, in front of the peritoneum, and, there being no important structures between the tip of the finger and the abdominal parietes, an incision is made through the skin only, from without, at a point corresponding with the tip of the finger within. This point is selected for fixing the stump, and is in most cases from two to two and a half inches above the internal abdominal ring. A guarded needle, threaded with one of the long ligatures attached to the neck of the sac, is now passed up the canal on the finger to the point selected for fixing the stump, and driven through the parietes. The needle, having been unthreaded, is withdrawn, to be threaded again with the other end of the ligature, and is reintroduced into the canal, and brought out at a point a little above that at which the first was brought out. The two ligatutes are then firmly tied, the ends cut off, and the sac is thus secured. A decalcified bone drainage-tube is now introduced into the canal, and the margins are laced together over it with silkworm-gut ligatures. The superficial wound is brought together with horsehair, and an antiseptic pad is applied, and kept in place by means of a spica bandage. The plastic inflammation resulting from this procedure causes a sufficient narrowing of the canal to prevent a recurrence of the hernia. The neck of the sac, which had moulded itself to the canal, is removed to a safe distance, and cannot encroach upon the orifice during the process of narrowing, and new structures overlie the internal opening. The bone drainage-tube, lying as it does alongside of the vas deferens, prevents any undue pressure being made upon this when the margins of the canal are laced together, and its presence causes an aseptic irritation, favoring a mild inflammatory process, and at the same time acting as a drain, should drainage be necessary. The opinion is expressed that the operation may be safely undertaken as early as the twelfth month of life, if the hernia is so large as to affect the child's health, or that a truss cannot be borne. The operation has been performed sixty times in males ranging from fourteen months to seventy-five years of age, and was in all cases followed by recovery, and none required the reëmployment of a truss or other abdominal support.

The Etiology of Whooping-cough.—At a recent meeting of the Berlin Medical Society, RITTER (*Deutsche med. Wochenschrift*, No. 45, 1892, p. 1020) reported that he had succeeded in isolating from the bronchial secretion of a number of cases of whooping-cough a diplococcus which he believes to be etiologically specific. The matters expectorated after a typical paroxysm of coughing were received into a sterile vessel and examined at once. The sputum was washed with distilled water, and the milky-white lenticular masses that were present were picked out and teased. Cultivation on agar developed diplococci, which, introduced into the air-passages of a tracheotomized dog, gave rise to cough and a fatal broncho-pneumonia. The bronchial secretion of this animal inoculated upon another gave rise to transitory illness. The organism is aërobic. It does not develop below a temperature of 86°, or above one of 107.6°, and stains well with the basic anilin colors. It is small, and can, with certainty, be distinguished from the pneumonia-cocci of Fraenkel. The number of organisms seems to correspond with the stage of the disease. In cats and young dogs inhalation of pure cultures of the organism was followed by a cough closely resembling that of pertussis.

THE MEDICAL NEWS.

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OF MEDICAL SCIENCE.

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SATURDAY, JANUARY 28, 1893.

REVISION OF THE CODE OF ETHICS.

A CORRESPONDENT writing to the *Journal of the American Medical Association* (January 14, 1893), deprecates any revision or modification of the Code of Ethics, and objects to the suggestions embodied in an editorial in THE MEDICAL NEWS of September 17, 1892, on various grounds.

We have no word to say against the Code as it stands, except that it contains unnecessary matter that obscures its meaning, and that its provisions fail, in certain respects, to meet the present requirements of the profession. However, we should approve of the Code as it is were it not that there exists a very vigorously expressed dissatisfaction with it on the part of a formidable minority of the profession. Of course, as a "Conservative Member" says, it would "be gracious for the minority to abide by the general sense of the profession and allow the Code to stand as it is, for it wrongs no man"; but the minority emphatically refuses to act in this gracious manner. In the State of New York, ten years ago, the minority repudiated one of the essential provisions of the Code, and secured the adoption by the State Society and most of the affiliated County societies, of what is known as the "New Code," which provides that "members of the Medical Society of the State of New York and of the medical societies in affiliation therewith, may meet in consultation legally qualified practitioners of medicine." In the State of New York, legally qualified practitioners of medicine include homeopaths, eclectics, botanics, and others who are considered irregular. This action led to the most bitter contest or division in the ranks of the profession that has occurred since our recollection.

It is not logical to assume that the sentiment which so divided the profession is confined to the State of New York. While time has practically healed the schism as far as personal relations of members of the profession to one another are concerned, the old societies in the State of New York are without representation in the American Medical Association, and they include many eminent and valuable members. A blind adhesion to the Code exactly as it stands, in view of the attitude of the minority, is little short of fanaticism, and is hardly less reprehensible than the extreme action of the advocates of the "New Code." It seems to us to be the plain duty of the Committee of Revision to endeavor to frame a Code which will unite the profession and be universally adopted by State organizations. To assume that an overwhelming majority of the profession is opposed to any change in the Code is illogical and not in accordance with the facts. In the State of New York only has there been an expression of opinion on the Code. We have before us a "catalogue of the members of the medical profession in the State of New York, showing their vote on the Code of Ethics," published by the "Central Organization of the New York State Medical Association to uphold the National Code of Ethics," in 1884. The Association seems to have made a careful canvass of the profession in New York, having reached by correspondence 5002 regular practitioners of medicine. The corrected results are the following:

For the National Code	2547
For the New Code	1040
For No Code	239
Unclassified	34
Uncommitted	1142
Total	5002

The "unclassified" include those whose replies were indefinite; and the "uncommitted" those who did not respond to repeated letters of inquiry. As the general result of this investigation, it appears that, out of 5000 regular physicians in the State of New York, one-half gave in their adhesion to the

Code as it now stands; more than one-quarter repudiated the Code; about one-quarter were unwilling to take one side or the other, or were indifferent. Does not this showing indicate so considerable a dissatisfaction with the present Code as to call for serious consideration on the part of the central medical organization of the United States? The appointment of a Committee for Revision of the Code is conclusive evidence that such is the opinion of the American Medical Association.

In the editorial of September 17, 1892, THE MEDICAL NEWS advocated a short Code embodying "rules of conduct that are simple, distinct, and easily understood"; a clear definition of the terms regular and irregular practitioners; and a clause especially which will indicate what is meant by a consultation, and lay down the conditions under which a regular physician may give advice to a patient under the care of an irregular practitioner. The last is the one question upon which the opinions of the profession are divided; and it is the provision in the Code relating to this question which has subjected the profession to criticism by the public on the grounds of intolerance and inhumanity. On this point we suggested the following:

"2. A physician should not meet in consultation with an irregular practitioner, or be associated with such an one in the treatment of a patient; but he may properly examine a patient and give an opinion or advice to the patient or friends, or perform a surgical operation, in the case of a patient under the care of an irregular practitioner, without consultation or professional association with such practitioner."

We still believe that, if some such provision were adopted by the American Medical Association, it would completely heal past dissensions, and do much to prevent differences in the future. At all events, the question involved is one that must be met and fully discussed.

It must be recognized that, practically, the Code is for the profession and not for the public. The public does not care for or read the Code; and, as a rule, the few who have any knowledge of its provisions ignorantly regard it as intolerant, and in a certain sense inhuman. It is not essential that a perusal of the Code should give "pleasure as well as instruction"; but it is essential that a Code should be perfectly distinct and unmistakable in its provisions, like any other code of laws. "A Conservative Member" misquotes us in one regard. We take the ground that: "It (the Code and not the public) has nothing to do with acts on the part of physicians that render them amenable to penal law." The Code is for the regulation of professional conduct; and any professional conduct that would render a physician amenable to penal law, would necessarily be in violation of the Code of Ethics.

We do not discuss the question of revision of the Code in anything approaching a controversial spirit. We have cited the contest in the State of New York as affording the only example in which there has been a decided expression of opinion on the "Code question"; and we hope that the deliberations of the Committee on Revision and the action of the American Medical Association will be so dispassionate and wise that the unfortunate experience of the profession in New York may not be repeated in our own or in other States, or similar dissensions find a place in the proceedings of the Association. We wish it to be distinctly understood, also, that, as between the Old Code, New Code, and No Code, as these terms are understood in the State of New York, we should be in favor of the "Old Code."

THE VIRULENCE OF GONORRHEA.

IT has long been well known that gonorrhea may be attended with various disastrous complications in consequence of the extension of the morbid process by continuity of structure. Thus, in the male there may be epididymitis, orchitis, prostatitis, cystitis, ureteritis, pyelitis, pyelo-nephritis, and, as ROBINSON (THE MEDICAL NEWS, August 7, 1892, p. 149) has shown, involvement of the seminal vesicles; and in the female, besides vaginitis, urethritis, cystitis, ureteritis, pyelitis, and nephritis, there may be metritis, salpingitis, and peritonitis. Not at all rarely, too, the inguinal glands are found to become enlarged and sometimes to undergo suppuration.

The affection inappropriately and ambiguously designated gonorrheal rheumatism has been ascribed to "metastasis," a term that was of the most vague significance until the bacterial origin of the infectious diseases received recognition. In the past it was generally accepted that gonorrhea was unattended with endocardial complications, but there is growing evidence to the contrary. This fact has been insisted on by the late DR. MACDONNELL, of Montreal (*American Journal of the Medical Sciences*, January, 1891, p. 1), and the cases recently reported by RUGG (*Lancet*, No. 3605, p. 772) and

HIS (*Berliner klin. Wochenschr.*, No. 40, 1892, p. 994) support his contention.

Various manifestations referable to the nervous system have also, from time to time, been reported in association with gonorrhea. These have been variously attributed to reflex influences, to peripheral neuritis, and to meningitis and myelitis, but there are few records of post-mortem findings. In this connection LEYDEN (*Zeitschrift f. klinische Medicin*, B. xxi., H. 5, 6, p. 607) has reported an interesting case and refers to others. A man, twenty-seven years old, was suddenly seized with symptoms of myelitis, which, in the course of little more than a week, proceeded to a fatal termination. During life a urethral discharge was observed, and in the secretion gonococci were detected. After death a meningo-myelitis in the dorsal region was found, while the mucous membrane of the bladder and the adjacent peritoneum, as well as the kidneys, presented the evidences of an extension of the inflammatory process. Gonococci could not be demonstrated in the lesion of the cord. In the cases of joint-complication and cardiac involvement, also, it has not been possible to demonstrate unequivocally the presence of gonococci at the seat of the secondary lesions; so that the presumption seems reasonable that these are but manifestations of an intoxication resulting from the absorption of the products of the biologic activity of the gonococci.

The observations here referred to will, in part, explain why in so many cases of chronic valvular lesions of the heart it is not possible to elicit a history of antecedent acute articular rheumatism. Without in the least attempting to belittle the rôle played by rheumatism in the etiology of endocarditis and valvular disease, we venture to express the opinion that the articular disease has been held responsible for many lesions that could readily have been ascribed to other influences. With a growing familiarity with and a more extended knowledge of the nature of the infectious diseases, we are learning to place the etiologic burden of an accumulating number of cases of inflammations of serous structures, together with their sequelæ, upon such diseases and conditions as enteric fever, pneumonia, diphtheria, erysipelas, influenza, and puerperal infection; scarlatina and chorea, by reason of their occult relationship with rheumatism, already belong in this category, and in this connection it is interesting to note that there is a growing tendency to look upon chorea as an infectious disease and naturally dependent upon a specific microbe.

In all infectious diseases, therefore, the possibility of secondary involvement of the serous membranes should be constantly borne in mind, in order that the complication may, as far as possible, be guarded against, and that it receive appropriate treatment should it arise.

A HOSPITAL IN PHILADELPHIA FOR INFECTIOUS DISEASES.

IF personal and political intrigue shall be rigorously excluded from its organization and management, a city hospital for infectious diseases, such as has been proposed by the *Public Ledger*, will be a public benefit.

The removal of the Almshouse from Blockley, leaving the entire plot of ground and such of the buildings now on it as may be properly available to be utilized for hospital purposes only, and the construction of isolating pavilions in sufficient number on the vacant lots still owned by the city in the vicinity of the Philadelphia Hospital, would be the best solution of the question.

The pavilions should be so constructed that they may be destroyed and replaced at appropriate intervals. A special operating-room and a special ward fully equipped with appliances for supply of steam and other necessary adjuncts, such as has been in use until recently at the Children's Hospital, should be set apart for cases of diphtheria and croup.

In considering what is the best means to stamp out diphtheria in the city, and in endeavoring to improve sanitary administration in general, however, it is important that the profession should be united and deliberate; that personal interests, ambitions, or resentments should not be allowed to dictate action or to prevent the best means and methods from being chosen; that all questions of "practical partisan politics" be kept resolutely out of the circle of influence. Only thus can permanently useful results be accomplished. "Dickering" with politicians, medical or non-medical, even for a good end, is like making palliative topical applications in a case of luetic ulceration—it leaves the cause of the lesion to continue its destructive activity faster than the local manifestations can be relieved. Whether the proposed hospitals would fall under the administration of the present efficient Board of Charities, or that of the Board of Health,

is a minor matter. Physicians should insist upon the entire separation of the Health Board from politics, and the appointment to all offices connected with the sanitary administration of the State and city of thoroughly qualified experts, and of such only. Unless we are wise enough and bold enough to do this, neither a hospital for infectious diseases nor anything else we can propose will be of much service.

SELECTIONS.

TOO MANY MEDICAL JOURNALS, COLLEGES, ETC.

WE quite agree with THE NEWS as to its statement of facts. There are too many medical journals; too many journals run solely for the benefit of advertisers, for the advancement of some one or more doctors irrespective of the good of medical art and science. There is a vast amount of material published that would never see print if but one-fourth as many journals were published. Doctors who can write good papers do not receive such compensation as they would if the number of journals were less and their quality better.

However, as we see it, this is the way in all similar matters. Of medical colleges there is a vast surplus over the requirements of the medical profession. The damaging effects on the profession are quite as far-reaching and disastrous as in the case of the superabundance of medical journals.

Of medical men there is a great surplus of the lower varieties. These interfere with the work and destroy much of the success of the better sort.

Of medical books what shall we say farther than that the multiplication of the lower grades is disastrous to all concerned?

So we might continue the list. There is too much poor truck of all sorts in the world. But what shall we do about it? This is the question that has puzzled us for many years. In general, where the carcass is, there the vultures will congregate and satisfy their hunger. To be rid of vultures, it is necessary to have no carcasses. So to get rid of these low-bred and ill-conducted journals, colleges, etc., it will be necessary to prevent the accumulation of material whence they derive their sustenance. This is a task that well may discourage the most enthusiastic reformer. However, much has been done, more is now doing, and the line of march is onward and upward. *Amer. Lancet.*

A CODE OF ETHICS.

THE code of ethics adopted by the American Medical Association has not given satisfaction to a certain section of the consultants and specialists of the State of New York, the reason being that they wanted a free hand, so as to be able to meet any practitioners, and not to be bound by any code of honor. We have some of the same class in this country to whom ethics are distasteful, all being fish that come to their net. It may be that the American code of ethics is not quite in harmony with the temper of modern times, and that it might be revised so as to bring it more in accordance with the spirit of the age, but there cannot be a doubt that when it was originally framed it was an admirable code, just to the patient in whose interests it was promulgated, and just to the medical attendant. It is very true that gentlemen require no codes, but, unfortunately, the medical profession is not all composed of gentlemen. Pains and penalties are required to keep a certain class in the right way, and the fear of professional ostracism acts as a healthy stimulus to right action. Society is controlled by its police; a recognized code, with attendant and prospective punishment for ill-doing, is absolutely required in a profession which provides such open portals, and we trust that the executive of the American Medical Association, even though they revise, may not weaken the honorable code handed down by their forefathers.—*Provincial Medical Journal*, xii, 133, p. 44.

REVIEWS.

ANATOMY. A Manual for Students and Practitioners. By FRED. J. BROCKWAY, M.D., and A. O'MALLEY, M.D. (The Students' Quiz Series.) Philadelphia: Lea Brothers & Co., 1892.

To compress within the limits of some three hundred and fifty pages of a Quiz book the essential facts of human anatomy is a task attended with no ordinary difficulties. In the effort to furnish a series of answers to such questions as "Where is such and such a structure?" or "How is a given organ described?" there is an ever-present danger of condensing too much, or of abbreviating to such an extent that the amount of information actually given may be very superficial. Anatomy is a branch of study of such prime importance that the student cannot afford to form other than an intimate acquaintance with it. In order to succeed in this he must be faithful in his attendance in the lecture-room, patient in the perusal of a standard text-book, and diligent in his work with scalpel and forceps at the dissecting-table. Now, although there is no substitute for these, the Quiz manual has its place as a most useful accessory.

This fact has evidently been appreciated by Dr. Brockway and Dr. O'Malley while compiling the book which they have just written. They claim, however, to present, not a duplicate of already existing anatomic compends, but a modern anatomy. In carrying out this purpose, the descriptions are given in a style which, although terse, is more explicit than could justly be expected of a book that merely essayed to be a compend. Throughout the sections on osteology and arthrology the excellent plan has been adopted of interspersing, in type smaller than that of the main text, the descriptions and classifications of Henle where they differ from those of English authorities, important points in comparative anatomy, and useful information as to function. A summary of the osseous homologies of the upper and lower extremities is a feature which will doubtless prove an advantage. In the section on myology, in addition to the older names for the muscles, those which have been agreed upon by the German Anatomical Society will also be found; and anomalous conditions are given in smaller text. This section, too, is concluded with a summary of the homologies between the two extremities.

The sections on the vascular, nervous, and digestive systems are all that could be desired.

At the end of the book is a glossary giving the pronunciation, derivation, and definition of anatomic terms which will prove of great value. It is to be hoped that it will often be consulted, and that it will be the means of correcting some, at least, of the frequent mispronunciations that one hears.

Altogether, the writers of this manual are to be congratulated upon the excellence of their work, and we predict for it a wide and favorable reception.

A PRACTICAL TREATISE ON DISEASES OF THE SKIN. By JOHN V. SHOEMAKER, M.D. Second edition, revised and enlarged, with chromogravure plates and other illustrations. Pp. 859. New York: D. Appleton & Co., 1892.

THIS second edition of the Treatise is a decided improvement upon the first edition. A general revision is noticeable, together with the addition of much new matter, most of which is in the line of therapeutics. Of the more recent remedies that have been brought forward in the treatment of cutaneous diseases, the medicated soaps, manufactured on such an extensive scale in Germany, are specially referred to. The author is firmly impressed with the value of the oleates, and gives a long list of these preparations, from which it would seem that they are applicable in many diseases.

Sodium sulfoleate is also mentioned as being useful as a solvent for many drugs, especially sulfur and chrysarobin; and, if its water is driven off, it may be employed as an ointment-base. Lanolin is also esteemed. Hydrastine hydrochlorate, erythroxylon coca, naphthol, thiol, tumenol, and jequirity are all specially mentioned as being useful. The last-named is regarded as a powerful remedy of the utmost value in specific ulcerations, indolent, scrofulous, and epithelial ulcers, and in ulcerating lupus. It is an irritant, and soon sets up severe local inflammation. The pastes are referred to, but the author does not give them the high rank they deserve. Syphilis is taken away from the neoplasmata and classified with the inflammations, between erysipelas and the acute simple erythemata.

In the treatment of that common and often rebellious disease, eczema, a great variety of drugs and formulæ are prominently brought forward—too many, we think. The practitioner will find it difficult to make a selection from the list, so highly praised are most of the remedies. The details as to the mode of application, and the varieties of the disease for which certain formulæ are suitable, might advantageously have been pointed out more definitely. The mass of material, in the way of drugs and formulæ, introduced into this chapter is not sufficiently digested. Something more than a mere enumeration of the drugs is demanded; we should be told as well how to use them to the best advantage. Indeed, this criticism applies to the therapeutics throughout the volume. Too many diverse remedies are cited without the indications for their employment being made sufficiently clear. The practitioner is consequently bewildered, and runs the risk of selecting the wrong remedy for his case. Quotations and references, especially foreign, are abundantly interspersed throughout the pages. The precise sources of the information, however, are not always given —omissions that impair the value of the book as a work of reference. American dermatology does not receive the cordial mention it deserves.

Some woodcuts and several admirable photographs enhance the value of the work. A copious formulary, occupying many pages, constitutes the last chapter. The general appearance of the volume is, in all ways, creditable to the publishers.

SOCIETY PROCEEDINGS.

ASSOCIATION OF AMERICAN ANATOMISTS.

Fifth Annual Session, held at Princeton, N. J., December 27, 1892.

DR. HARRISON ALLEN, of Philadelphia, President; DR. D. S. LAMB, U. S. A., Secretary.

The following were elected to membership: Herbert S. Birkett, M.D., Montreal, Canada; Tracy Earl Clark, B.S., Ft. Plains, N. Y.; J. Milton Greenman, Philadelphia, Pa.; C. A. Hamann, M.D., Philadelphia, Pa.; James W. Hartigan, M.D., Morgantown, W. Va.; George S. Huntington, M.D., New York City; Peter J. McCourt, M.D., New York City; Wm. B. Scott, Princeton, N. J.; Wm. Anderson, F.R C.S., etc., London, England, and C. S. Minot, S.D.

The Executive Committee, through the Secretary, reported that the circular in regard to information concerning the negro race was nearly ready.

The following papers were then read:

1. "Crania of the Cetacea."

2. "The Human Lower Jaw," by Dr. Harrison Allen, University of Pennsylvania.

These two papers were illustrated by specimens, and discussed by Prof. Herrick, and also by Prof. George Macloskie, of Princeton University.

3. "History of the Development of Bone Tissue;" illustrated by microscopic slides, by Dr. Carl Heitzmann, New York City. Discussed by Professors Macloskie and William Libbey, Jr., of Princeton University.

The President, DR. ALLEN, then read his Annual Address, from which the following quotation is made:

"It is now four years since the Association of American Anatomists was founded with a list of fifteen members. Many were the objections raised when it was proposed to organize a new society. Eminent professors declared that it was not needed; others, while sympathizing with its objects, were convinced that the list of members would be so small that it would be a difficult matter to fill the necessary offices. The fact that an active membership exists of ninety-four persons, representing twenty-two States, the District of Columbia, and the United States Army, sufficiently meets both the above-mentioned objections. It tells us unmistakably that the society is needed, and that not only are the offices filled, but that the Association is recognized as a devoted band of students, whose activity compares favorably with that of other scientific organizations.

"But the work thus far accomplished is but the harbinger of what it is hoped may be undertaken. An attempt at coöperation between the American Anatomists is to be brought before you at this meeting. The Executive Committee will present a plan by which observations on the anatomy of the negro shall be entered upon. It

is earnestly hoped that every teacher and demonstrator of anatomy in the country, whether a member of this society or not, will assist its committee in accumulating observations on this class of subjects."

4. "An Anomalous Development of the Human Sternum," specimen and remarks, by Dr. D. S. Lamb, Army Medical Museum, Washington, D. C. Discussed by Dr. Dwight. 5. "Discovery of an Ossified Thyroid Cartilage and a Supposed Rudimentary Clavicle in an Artiodactyl," by Prof. Wm. B. Scott, Princeton University; specimen exhibited. Discussed by Prof. Cope and Dr. Allen. 6. "Observations on the Psoas Parvus and Pyramidalis," a study of variation, by Dr. Thomas Dwight, Harvard Medical School. 7. "Significance of Percentages in Reversions in Human Anatomy," by Prof. H. F. Osborn, Columbia College, New York City. Discussed by Prof. Cope and Drs. Dwight and Lamb.

3.00 P.M. Session resumed. The following papers were read: 8. "Histogenesis in the Brain, and its Bearings on Development and Decline," by Prof. C. L. Herrick, Dennison College, Granville, Ohio. Discussed by Drs. Heitzmann and Piersol. 9. "The Metapore or Foramen of Magendie," with photographs, by Prof. B. G. Wilder, Cornell University. In the absence of Prof. Wilder, the paper was read by Mr. Clark. Discussed by Prof. Herrick. 10. "Neuromerism and the Cranial Nerves of Ophidia," by Prof. Herrick. 11. "The Insula of the Pig," with specimens. Discussed by Drs. Allen, Dwight, and Spitzka. 12. "Note on Diagrams of the Spinal Cord," by Dr. J. T. Duncan, Toronto, Canada. Read by the Secretary and referred to the Committee on Nomenclature. 13. "Duration of Motion of Human Spermatozoa," by Dr. George Piersol, University of Pennsylvania. Discussed by Drs. Spitzka and Heitzmann.

THURSDAY, DECEMBER 29, 1892.

The report of the Committee on Nomenclature, Dr. Wilder, secretary, was presented. The reading of the report was dispensed with, copies having been placed in the hands of the members present.

The following papers were read: 14. "The Innervation of the Organ of Corti," by Howard Ayers, Ph.D., Curator of the Lake Laboratory, Milwaukee, Wis. Microscopical slides, with remarks. 15. "The Posterior Surface of the Liver; described by Vesalius," by Dr. F. H. Gerrish, Bowdoin College, Maine. Discussed by Drs. Dwight, Allen, and Heitzmann. 16. "Embryos of Bats," with specimen and plates, by Dr. Allen. Discussed by Profs. Cope and C. S. Minot. 17. "Meckel's Diverticulum," by Dr. D. S. Lamb. Army Medical Museum, Washington. Discussed by Drs. Dwight and Minot. 18. "Delimitation of Abdominal Regions," by Dr. E. A. Balloch, Howard University, Washington. Read by the Secretary. 19. "The Need of Agreement in the Limits of the Abdominal Regions," by Dr Gerrish. The last two papers were discussed together by Drs. Dwight, Piersol, Kemp, Heitzmann, and Lamb.

Several motions were made in regard to the disposition of these two papers and the discussion thereon. It was finally decided that, with the consent of the authors, copies should be sent to the committee on this subect of the Anatomical Society of Great Britain and Ireland; and also to the committee of the German Society.

20. "Physical Characteristics of the Kootenay Indians of Southeastern British Columbia," by Prof. Alexander F. Chamberlain, Clark University, Worcester, Mass. Read by title. 21. "Series of Thirty-five Natural-size Photographs of Sections of Human Brain," with brief remarks, by Dr. I. S. Haynes, University of New York.

The following members were present during the meeting: Messrs. Allen, Cope, Dwight, Gerrish, Haynes, Heitzmann, Herrick, Kemp, Lamb, Minot, Osborn, Piersol, Roberts, Ryder, Spitzka, Wortman, and Wright.

CORRESPONDENCE.

A "CANCER-CURE."

To the Editor of THE MEDICAL NEWS,

SIR: An "old woman" remedy for carcinoma has come under my notice within the past few years. Generally these remedies are based on mere superstition and are valueless. I have been very much interested in this one lately, because the old lady with this has succeeded in curing two epitheliomas. I promised profound secrecy, and she told me the remedy. The preparation is as follows: The juice is expressed from a large quantity of wood-sorrel (oxalis acetosella); this is poured into a pewter plate, and the whole placed in the sun and allowed to remain about one week. At the end of this time it has evaporated to a solid mass. This mass is then scraped away, and a part is applied to the diseased surface. Great pain appears in about twelve hours, and a few hours later considerable swelling is developed; both continue for about four days. On the fifth day sloughing begins, and a mass of diseased tissue falls out in one piece; later smaller portions slough way, leaving a clean, healthy-looking ulcer, which rapidly heals.

The juice of the wood-sorrel contains free oxalic acid and acid potassium oxalate. These act on the lead and tin (of which the pewter is composed), forming oxalates of these respective metals. Oxalates of both lead and tin are strongly caustic, and when applied to carcinomatous tissue act, I suppose, in a similar manner as do the zinc and arsenic pastes. I simply bring the above facts before the profession as a matter which may justify investigation.

GEORGE WALKER, M.D.

YORKVILLE, S. C.

THE PREVENTIVE TREATMENT OF TETANUS.

To the Editor of THE MEDICAL NEWS,

SIR: In your issue of December 31, 1892, you publish a very interesting article on "The Preventive Treatment of Tetanus." The article in question is not only interesting, but logical and rational. However, I do not know whether or not Dr. T. W. Simmons, of Hagerstown, Md., wishes to claim originality or priority for his suggestion. It seems to me that such means must have occurred to any physician at all acquainted with the etiology of the disease, and I have no doubt but that many have made use of such means. Suffice it to say, that Dr. J. A. Tarkington and myself, who do the surgical work of the Beltimore and Ohio Railroad in this city, have both used such treatment in all of our cases of traumatism where we have had occasion to suspect even the possibility of the development of tetanus. This we have done for many months on exactly the same basis

that Dr. Simmons very properly lays down. In not a single case where such treatment was used did tetanus subsequently develop. We, however, lacking the olive-pointed syringe which Dr. Simmons suggests, made use of the ordinary hypodermatic syringe.

Sincerely,

CHARLES MILTON BUCHANAN, M.D.,
Professor of Chemistry, Toxicology, and Metallurgy, National University.

WASHINGTON, D. C., January 18, 1893.

REMOVAL OF THE VERMIFORM APPENDIX.

To the Editor of THE MEDICAL NEWS,

SIR: Kindly inform me through the next issue of your paper, *when* and by *whom* the operation for removal of the vermiform process was first performed in the United States, and *who* performed the second one?

MINNEAPOLIS, MINN., January 8, 1893.

[See THE MEDICAL NEWS, August 6, 1892, p. 153; November 5, 1892, p. 531.]

NEWS ITEMS.

The Eighty-seventh Annual Meeting of the Medical Society of the State of New York will be held at Albany, February 7th, 8th, and 9th.

The following provisional program has been arranged:

President's Inaugural Address.

"The Relation, in the Male and Female, of Genital Disease to Mental and Nervous Affections," by Landon Carter Gray, M.D.

"The Epileptic Interval; Its Phenomena and their Importance as a Guide to Treatment," by William Browning, M.D.

"Reflex Disturbances in the Causation of Epilepsy," by William C. Krauss, M.D.

"Mental Epilepsy," by J. Montgomery Mosher, M.D.

"The Development of Epilepsy after Traumatic Injury to the Skull," by B. Sachs, M.D.

"The Treatment of Uremic Convulsions," by R. C. M. Page, M.D.

"The Registration of Midwives," by J. L. Kortright, M.D.

The Relative Value of Certain Obstetrical Operations.

"General Review of the Operations to be Discussed," by Dr. Egbert H. Grandin.

"The Limitations of Embryotomy," by Dr. N. Clifton Edgar.

"The Limitations of the Cesarean Section," by Dr. Robert A. Murray.

"The Anatomical Limitations of Symphysiotomy," by Dr. J. E. Kelly.

"The Clinical Limitations of Symphysiotomy," by Dr. Charles Jewett.

General Discussion, to be participated in by Drs. E. P. Davis, H. A. Kelly, H. C. Coe, and Reynolds.

"Practical Antisepsis and Asepsis," with stereopticon demonstrations (by invitation), by Howard A. Kelly, M.D.

"Epitaphs from the Tombstones of Medical History," with stereopticon projections of many old and rare medical portraits, by Joseph H. Hunt, M.D.

The Management of Suppuration Complicating Tuberculous Disease of the Bones and Joints.

Papers by Drs. V. P. Gibney, Roswell Park, Henry Ling Taylor, and Louis A. Weigel.

The Present State of Knowledge as to Carcinoma.

"The Pathology of Carcinoma," by H. C. Coe, M.D.

"The Etiology of Carcinoma," by Roswell Park, M.D.

"The Value of Internal Medication in the Treatment of Carcinoma," by Jarvis S. Wright, M.D.

"The Results Obtainable from the Use of Anilin Products in Carcinoma," by Willy Meyer, M.D.

"Caustics in the Treatment of Carcinoma," by Daniel Lewis, M.D.

"The Knife in the Treatment of Carcinoma," by N. Jacobson, M.D.

Discussion to be opened by Dr. George R. Fowler, of Brooklyn.

"Tuberculous Epididymitis," by Herman Mynter, M.D.

Newer Methods of Diagnosis and Treatment of Stomach and Intestinal Diseases.

"The Practical Value of the Newer Methods of Examination in the Diseases of the Stomach, with a Consideration of the Indications Given for Diet and Treatment by such Examinations," by Henry L. Elsner, M.D.

"The Methods of Obtaining and Examining the Stomach Contents in Disease for Purposes of Diagnosis," by J. Fuhs, M.D.

"The Disturbances of the Motor Function of the Stomach; Their Diagnosis, Symptoms, and Treatment," by C. G. Stockton, M.D.

"The Physiological Effects of Electricity in the Stomach, the Indications for its Administration and Use in Gastric Disease, and the Methods of Using the Same," by Max. Einhorn, M.D.

Anniversary Address by the President in the Senate chamber:

The Evolution of the American Surgeon.

"Report of a Case of Severe Abdominal Injury Terminating in Recovery," by J. S. Cooley, M.D.

"The Treatment of Inguinal Hernia," by Alex. Dallas, M.D.

"Certain Types of Septicemia Resulting from Abortion," by Andrew F. Currier, M.D.

"Puerperal Sepsis, Its Prevention and Cure," by William W. Potter, M.D.

"Hoarseness," by W. Franklin Chappell, M.D.

"The Diagnosis and Nomenclature of Fevers," by Nelson G. Richmond, M.D.

"Congenital Opacities of the Lens," by William F. Mittendorf, M.D.

"Is Stoerk's Blennorrhea and Laryngitis Sicca One and the Same Disease," by W. Freudenthal, M.D.

State Medical Examinations in New Jersey.—It is officially announced that candidates applying, after the meeting of the State Board of Medical Examiners of New Jersey, to be held in July, 1893, for licenses to practise medicine in that State, will be examined on the following subjects

arranged in sections, as follows, viz.: Sec. 1. Materia Medica and Therapeutics. Sec. 2. Obstetrics and Gynecology. Sec. 3. Practice of Medicine (including diseases of the skin, nose, and throat). Sec. 4. Surgery (including surgical anatomy, and diseases of the eye, ear, and genito-urinary organs). Sec. 5. Anatomy. Sec. 6. Physiology. Sec. 7. Chemistry. Sec. 8. Histology, Pathology, and Bacteriology. Sec. 9. Hygiene and Medical Jurisprudence. Before a license will be issued candidates examined in the first class, *i. e.*, graduates of five years or more, shall obtain a total average of 80 per cent. Candidates examined in the second class, *i. e.*, graduates of less than five years, shall obtain a total average of 75 per cent., providing that in no one section shall the percentage be less than 33⅓ per cent.; in which case, however, should the total average percentage in all the other sections be above 75 per cent., the candidate may be immediately granted a second examination upon that section. Candidates examined in the third class, *i. e.*, non-graduates, who have attended three full courses of lectures in a reputable medical school, shall obtain a total average of 80 per cent.; and candidates taking their preliminary or final examination, shall obtain a total average of 80 per cent. at each of said examinations.

Swallowing a Razor.—There was much excitement in Paris some years ago over "l'homme à la fourchette," a man who had swallowed a fork, which was successfully removed by a somewhat elaborate operation. A still more remarkable case has this week been successfully treated at the Lincoln Hospital by gastrotomy. The following is a brief note which has been furnished to us of this remarkable and interesting case: A woman, aged sixty-nine, in a depressed condition of mind, was supposed to have swallowed a full-sized razor on December 13th. She was admitted into the County Hospital the same day. There were no symptoms, and the presence of the razor could not be determined till December 18th, when the end could be felt at the pylorus. On December 19th vomiting commenced, and Mr. Cant, surgeon to the hospital, operated, opening the abdomen by an incision in the median line; then feeling the razor, and bringing the stomach to the opening, he was able successfully to remove it. The wound in the stomach was doubly sutured, and the external wound closed. Thirty hours after the operation the temperature was normal, the bowels had acted naturally, and there was no unfavorable symptom. The razor, a large black bone-handled one, was somewhat acted upon by its six days' digestion.—*British Medical Journal*, No. 1669, p. 1401.

The Cincinnati College of Medicine and Surgery.—Dr. J. Trush has resigned the Chair of Theory and Practice of Medicine in consequence of ill health, and the vacancy thus created has been filled by the transfer of Dr. E. W. Mitchell from the Chair of Materia Medica and Therapeutics.

Dr. G. A. Fackler, Professor of Materia Medica and Therapeutics at the Women's Medical College of Cincinnati, has accepted the appointment to the vacancy created by the transfer of Dr. Mitchell.

Esmarch, the distinguished German surgeon, celebrated his seventieth birthday on January 9th.

The Fifth District Branch of the New York State Medical Association will hold its ninth annual meeting in Brooklyn May 23, 1893. Fellows that desire to read papers will please notify the Secretary, Dr. E. H. Squibb, P. O. Box, 760, Brooklyn.

The R. I. Medical Science Monthly is the name of a new journal published at Providence, which is intended to make "a monthly review of reform and progress in the medical sciences." Dr. J. Frederick Haller is the managing editor, and he will be assisted by a corps of associates.

Correction.—A paper in THE NEWS of December 10, 1892, on "Abdominal Pregnancy," by Dr. H. A. Coe, contains the statement that the patient whose case was reported "was transferred to an insane asylum, from which she was discharged three months later mentally sound," etc. Dr. Coe wishes us to state that he was misinformed in regard to the subsequent history of the patient, who is still in the asylum.

BOOKS AND PAMPHLETS RECEIVED.

The Soil and its Relation to Health. By Edward T. Nelson A.M., Ph.D. Pamphlet, 1892.

The Medical Properties of Bromo-lithia Water. By W. A. Dixon, M.D. Reprint, 1892.

World's Columbian Exposition. Department of Liberal Arts. Circular No. 9. The Bureau of Hygiene and Sanitation.

A Case of Brain-Tumor with High Grade of Choked Disc. Autopsy. By Lewis H. Taylor, M.D. Reprint, 1891.

Kentucky School of Medicine in the City of Louisville. Register of Students, 1892. Circular of Information, 1893.

A Case of Pneumonia Treated by Transfusion of Blood from a Convalescent Case. By W. E. Hughes, M.D., and W. S. Carter, M.D. Reprint, 1892.

Intestinal Obstructions: Diagnosis and Treatment. By Frederick Holme Wiggin, M.D. Reprint, 1892.

An Experimental Inquiry Concerning Elastic Constriction as a Hemostatic Measure. By Nicholas Senn, M.D., Ph.D. Reprint, 1892.

A Case of Hemorrhagic Pleurisy; Probably Primary Cancer. By Andrew J. Downes, M.D. Reprint, 1892.

Diseases of the Kidneys and Bladder. A Text-book for Students of Medicine. By W. F. McNutt, M.D., M.R.C.S. Edin., L.R.C.P. Edin. Philadelphia: J. B. Lippincott Company, 1892.

Address on Medical Education. By J. T. Jelks, M.D. Pamphlet. Little Rock, Ark.: Press Printing Company, 1892.

Transactions of the Washington Obstetrical and Gynecological Society. Vol. iii. New York: Press of Stettiner, Lambert & Co., 1892.

A Contribution to the Study of Cystic Kidney. By Ludwig Hektoen, M.D. Reprint, 1892.

Diseases of the Lungs, Heart, and Kidneys. By N. S. Davis, Jr., A.M., M.D. Philadelphia and London: The F. A. Davis Company, 1892.

Tuberculosis of Bones and Joints. By N. Senn, M.D., Ph.D. Philadelphia and London: The F. A. Davis Company, 1892.

Report of a Case of Multiple Sarcomata in an Infant. By Frederick A. Packard, M.D. Reprint, 1892.

A Case of Akromegaly, and Illustrations of Two Allied Conditions. By Frederick A. Packard, M.D. Reprint, 1892.

A Plea for Early Diagnosis in the Pelvic Diseases of Women. By B. F. Baer, M.D. Reprint, 1892.

Ueber das Koch'sche Heilverfahren gegen Tuberkulose. Eine kritische Studie. Von Prof. Mariano Semmola, in Neapel. Reprint. Wien, 1891.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LXII. SATURDAY, FEBRUARY 4, 1893. No. 5.

ORIGINAL ARTICLES.

THE TREATMENT OF CHOLERA.

BY ROBERTS BARTHOLOW, M.D., LL.D.,
OF PHILADELPHIA.

PERSONAL experience during two epidemics of cholera will, I trust, be considered some justification for adding another to the numerous papers that have appeared on the subject of cholera. Unfortunately, it cannot be said that the lessons of experience have been fruitful in curative results, but they afford unmistakable indications as to the direction our efforts should take in the future, and they have settled opinions as to the practical value of many of the proposed remedies. Until Koch's discovery of the comma-bacillus there had been no scientific basis for the therapy; but even now, with all the aid afforded by this great fact, the problem of a cure for cholera remains unsolved. The mortality-rate continues nearly at the same level, and although the epidemics have lessened in severity, these facts only show that sanitation has done much, whilst therapy, if not impotent, has been at least unequal to its prescribed task.

The theory of a cholera-seizure, based on the existence and agency of a specific microbe, may be stated as follows:

The parasite, reaching the intestinal canal by any of the several channels of communication, finds there a suitable nidus, and undergoes pullulation, increasing enormously in numbers, and producing as a result of its vital activity a peculiar poison—a ptomaïne—and on the action of this morbid material depends the systemic symptoms as they successively arise. First, we have the evidences of a local irritation—the cholera-diarrhea—due to the presence and development of the bacillus on the surface of the mucous membrane. Next is the stage of systemic infection, due to the absorption of the ptomaïne, quickly followed by the algid state, and then, should reaction occur, a typhoid condition. An important chemical change also takes place, consisting for the most part in an increased alkalinity of the intestinal juices and of the blood. Coincidently with these alterations occurs an extraordinary change in the mucous membrane; its epithelial layer is detached more or less completely, and the basement membrane laid bare. The normal functions are necessarily abolished, and the transudation from the bloodvessels is enormously increased. This outward diffusion of the blood-serum makes the blood thick, and its movement in the vessels sluggish, and the blood-globules become so much changed in structure as to be unable to functionate.

Such is the "therapeutic diagnosis" on which we now base our measures for relief.

The first point is to arrest the preliminary diarrhea. There are three indications for the use of remedies: the presence of a parasite in process of pullulation; the excessive alkalinity; the diffusion of the blood-serum from the vessels into the intestinal canal.

Of all the remedies proposed for the arrest of the diarrhea, not one has done so much good, in the writer's experience, as sulphuric acid. It is usual, and generally best, to combine some opium with it, according to the formulæ given below.[1] Sulphuric acid is a germicide; it neutralizes the alkalinity of the intestinal canal, and promotes diffusion into instead of outward from the vessels. During past epidemics opium has had an important place as the principal, or the adjunct, or associated, remedy. The experience of the present epidemic is against the use of large doses of opium, because of the narcotism, and the paralytic state of the intestine thereby induced. On the other hand, small doses, especially for the control of the preliminary diarrhea, are quite indispensable. I find that amongst those who are against the free use of opium, is Rumpf,[2] whose observations were made in the New General Hospital at Hamburg during the present epidemic, and also the veteran Ziemssen.[3] Both, however, find small doses useful in certain conditions, amongst which the preliminary diarrhea is most important. So necessary is opium during the first stage that all the formulæ most popular during the past and present epidemics contained it. I may mention the preparation of Squibb, which is largely used now as formerly. This contains rhubarb, aromatics, and the deodorized tincture of opium. According to Meyer the

[1] R.—Acid. sulphuric. aromat. . . . . ℥v.
Tinct. opii deodorat. . . . . ℥ij.—M.
Sig.—From ten to twenty drops every hour or two in sufficient water.

R.—Acid. sulphuric. dil. . . . . ℥iij.
Tinct. opii camph. . . . . ℥xiij.—M.
Sig.—A teaspoonful every half-hour or hour in water.

[2] Deutsche med. Wochenschr., 1892, No. 39. Abstract in Centralblatt für die gesammte Therapie, November, 1892.

[3] Münch. med. Wochenschr., 1892, No. 41. Ibid., Dec. 1892.

prescription given below[1] was employed for a diaphoretic action, and for the diarrhea a decoction of rhatany, with tincture of cinnamon and tincture of opium. Ziemssen advises fifteen drops of the tincture of opium in infusion of chamomile as an enema, to restrain the diarrhea. In India, chlorodyne—the original nostrum—has had the first place as a remedy for all stages of the disease. This preparation contains two ingredients of especial value, namely, morphine and atropine. Also, pills of lead acetate and opium, of tannin, capsicum, and opium, of camphor and opium—with or without tannin and capsicum—were largely employed. Indeed, it is impossible to name the various combinations in which confidence was reposed—each physician having his special pill or mixture. I should mention, also, that homeopathy had its favorite remedy in Rubini's solution of camphor—a saturated solution in alcohol. Almost any of the various combinations of remedies proved equal to the arrest of the preliminary diarrhea, if administered early enough. The case was far different when systemic infection occurred.

During the existing epidemic the treatment of cholera-diarrhea has been attempted on a scientific basis, and various new remedies have been brought into use. The modern doctrine of antisepsis, and the discovery of the cholera-bacillus, have led to the employment of germicides, which are administered with the view to arrest the development and to destroy the product of the cholera-microbe. But conclusions drawn from the results of the treatment of cholera-diarrhea can be depended on only when bacteriologic examinations have shown the presence or absence of the cholera-bacillus. The severity of the diarrhea is not a means of differentiating, for it has been found that in very mild cases the bacillus may be present,[2] and in cholera morbus there may be all the symptoms of true cholera, without a single parasite in the intestinal canal. In the absence of a proper bacteriologic diagnosis, the curative action of any remedy cannot be determined.

The remedies from which the most has been expected were salol and creolin. From a theoretic standpoint nothing could be more appropriate than the action of salol, for this substance is supposed to pass through the stomach unchanged and to be separated into its constituent elements—salicylic acid and phenol, by the alkaline intestinal juices; but the practical outcome has not been so fortunate as its promoters hoped for and predicted. At the Moabit Hospital in Berlin,[1] and at the New General Hospital in Hamburg,[2] salol and creolin were found useless. From my observation of the effects of naphthalin in the various forms of diarrhea, I am inclined to believe that this remedy promises well. As under ordinary circumstances it affects the whole intestinal canal, deodorizes the stools, and restrains the peristaltic movements, it should under the different conditions of a true cholera-attack accomplish similar results. Naphthalin may be combined with bismuth and carbolic acid, and opium may enter into the combination, if necessary.[3]

The experience of the present epidemic is in harmony with that of preceding epidemics as regards the utility of calomel as a remedy for cholera, but on very different grounds. Now it is regarded as the most efficient of the antiseptic remedies. Formerly it was given in truly massive doses—from ℈j to ʒj—to arrest vomiting, to secure "a change in the secretions," and to bring about bilious evacuations; and it was also administered in small doses (from ½ gr. to 2 grs.) to arrest vomiting, to act on the liver, and to exert its specific action on the gums, for it was not uncommon to hear a practitioner say: "If only the gums were touched," the case would take on a different aspect.

Rumpf maintains the superiority of calomel as a remedy over all other remedies that have been used thus far in the treatment of cholera. Ziemssen, also, strongly advocates it, administered in somewhat larger doses—usually giving a large single dose (8 grs.) at the outset, and smaller doses at short intervals thereafter. At the Hamburg New Hospital the initial dose was 4 grs. and subsequently every two hours 0.02–0.05 grams[=⅓–¾ gr. nearly] (Rumpf.) The administration of the calomel was kept up during the first and second stages. Similar use was made of calomel at the Moabit Hospital, Berlin.

Enteroclysis has come into use during the present epidemic. The method of Cantani, who is the author of this expedient, consists in irrigating the intestine with a solution of tannic acid. His directions are to take from 5 to 10 or 20 grams [1¼ ʒ to 2½ ʒ or 5 ʒ] of tannic acid in from 1½ to 2 liters [1 to 2 quarts] of hot water or chamomile infusion, and to this add from 20 to 30 drops of laudanum, and suspend by means of gum arabic,

[1] Münch. med. Wochenschr., October, 1892, p. 591:

℞.—Ol. menth. pip. . . . . gt. j.
Tinct. opii . . . . . ♏xx.
Tinct. rhei vin. } . . . . . āā ʒj.
Tinct. capsici }
Spirit. vini gallici . . . . . ℥ij.—M.
Sig.—A teaspoonful in black tea.

[2] Dr. William Russell: London Lancet, December 3, 1892.

[1] Russell: Lancet, December 3, 1892.

[2] Rumpf: Centralblatt für die gesammte Therapie, November, 1892.

[3] ℞.—Naphthalin. . . . . ʒss.
Bismuthi salicylat. . . . . ʒij.
Acid carbolic. . . . . ʒss.
Glycerini . . . . . ℥ss.
Aquæ chloroformi . . . . . ℥jss.—M.
Sig.—A teaspoonful every half-hour, hour, or two hours.

from 30 to 50 grams. The temperature should be from 38° to 40° C. [99° to 104° F.] With this the intestine is irrigated. A fountain syringe with a glass reservoir, properly sterilized, is a suitable apparatus for this purpose. Views differ as to the utility of this procedure. At Hamburg and Berlin it was found useless; but Ziemssen, probably on theoretic grounds, urges its use at all stages. It is difficult to understand how irrigation of the large intestine can modify a morbid process going on in the small intestine—for nothing is more certain than that an injected fluid does not pass beyond the ileo-cecal valve. It is not surprising, therefore, to learn that actual experience with this treatment is not in its favor, notwithstanding Ziemssen's ardent advocacy, and Cantani's sanguine expectations.

So long ago as 1834, *infusion* of salines into the veins was practised. It had been seen at this early period how much injury the enormous outpouring of serum must inflict on the constitution of the blood, and on the circulation, and during every epidemic since attempts have been made to arrest the algid stage by supplying fluid to the veins, with marvellous immediate effect, but without permanent results. The modern expedient is less complicated than the operation for transfusion as originally performed. Now a simple reservoir for containing the fluid, a flexible tube, and a needle-trocar for perforating the vein, suitably sterilized, are the instrumental means required. The saline solution most used is one containing sodium chlorid and sodium carbonate. Hayem's solution consists of common salt 5 [= ʒj and ʒv], Glauber's salt 10 [= ʒij and ʒij], distilled water, sterilized, 1 liter [= 1 quart]. Cantani's solution contains 4 [= ʒj] of sodium chlorid, and 3 [= 48 grains] of sodium carbonate in 1 liter [= 1 quart] of water. The ordinary salt solution, properly sterilized, and at the right temperature, suffices.

Cantani[1] proposed the subcutaneous infusion of a saline solution, as a substitute for the intra-venous method. The term *hypodermatoclysis* has been contrived to designate this procedure. The apparatus required for the performance of this method consists of a reservoir for the fluid, a flexible tube, and a hypodermatic needle. The axillary region, the buttocks, and the inter-scapulary and subscapular spaces are suitable sites for the infusion. To secure the admission of a sufficient quantity of fluid, the infusion may be allowed to continue for some time (Samuel's continuous method).

Saline infusion is also practised by introducing the fluid into the peritoneal cavity. The same apparatus as that used for the subcutaneous method may be employed for this operation. The experience with the peritoneal transfusion is very limited for the present epidemic, and it need not, therefore, be considered here.

Infusion of salines is adapted to the treatment of the algid stage, to supply a material to the blood—the serum—which has been lost.

If the immediate effects of the intra-venous infusion could be fixed in a permanent state, nothing could be more effective than this mode of treatment. Unfortunately, the immediate and astonishing improvement is not sustained for any considerable time; in most cases a repetition of the injection becomes necessary in a few hours; the improvement each time is less decided, and still shorter in duration, until finally the injection is without effect and profound and fatal collapse ensues. The mortality in cases treated by intra-venous infusion in the New General Hospital at Hamburg was, in a group of 103 cases, 87, the rate being therefore 84.5 per 100, thus showing but little influence over the results in cases of the algid stage.

As compared with hypodermatoclysis, the advantage, slight as it is, remains with intra-venous infusion. The remarkable change at once manifest in the condition of the patient when the route by the veins is pursued does not occur to nearly the same extent when the subcutaneous infusion is practised; the effect comes on more slowly, and the result, as shown in the mortality following these methods, does not favor hypodermatoclysis. Rumpf declares that the subcutaneous method is not nearly equal to the intra-venous infusion in the algid stage. Both modes of treatment were much employed in Hamburg. In the two hospitals—the New and the Old General Hospitals—the method of intra-venous infusion was more used, and in private practice throughout the city the subcutaneous, especially the continuous method of Samuel, because of the greater care and safety with which it is done, and no assistant being required. At the Moabit Hospital in Berlin, Dr. Guttmann preferred the subcutaneous infusion of salines, and at Koch's Institute the intra-venous method was the favorite.[1]

From these facts it is evident that a final decision has not been reached regarding the comparative value of these plans of treatment, but it seems to me nearly certain that in the algid stage, with fatal collapse imminent, it were better to resort to the intra-venous method. In private practice, hypodermatoclysis is preferred by most of the Hamburg physicians, because an assistant is not needed and the injection is entirely safe, although abscesses have resulted in some instances. The large amount of fluid considered necessary, which is forced under the skin, explains the mishap. Irrespective of this, and considered from the point of view of the results

[1] Centralblatt für die gesammte Therapie, October, 1892. From Berliner klin. Wochenschr., No. 37, 1892.

[1] Russell: Lancet, December 3, 1892, p. 1268.

in blood-transfusion, it is my belief that the quantity of fluid passed into the veins by either mode is much too large, one liter [= one quart] being considered the minimum. Yet at the Hôpital Bonjean, Paris, as much as two liters were injected in twenty minutes, and without any ill result so far as reported.

A new method of treating cholera is the subcutaneous injection of Klebs's *anti-cholerin*, a toxic material obtained from cultures of the comma-bacillus, after the method of Koch. This was also tried at the New General Hospital at Hamburg, and is reported on by Dr. Manchot, who compares the results of its use with the statistics of the intra-venous method. Of 31 cases treated by anti-cholerin there were 21 deaths, the mortality being 67.7 per 100; whereas, of 103 cases (already given) treated by saline infusion, there were 87 deaths, the percentage being 84.5. It should be understood that these were cases of cholera already advanced to the algid stage.

As during the algid stage of cholera the temperature is subnormal, the surface is cold, and the breath cold, the application of artificial heat in the shape of bottles of hot water, hot bricks, etc., was usually practised in past epidemics. During the present epidemic hot baths have been made use of at the Hamburg hospitals. Winternitz[1] extols especially the use of cool sitz-baths and frictions of the body with towels wrung out in the water. In Hamburg, Berlin, and in Russia, but rarely in Paris, hot baths were held in high esteem during the algid stage. The temperature ranged from 38° to 40° C., or from 99° to 104° F. The immediate effect of the bath is to raise the warmth of the body and to increase the pulse-rate and the depth and frequency of the respiratory movements.

The treatment of the algid stage by the use of medicaments during the present epidemic does not differ materially from that of former epidemics. There are some new remedies, however, that deserve consideration. The soluble salts of caffein were much used in Paris subcutaneously, and it is said with benefit. The diuretic action of this agent, as well as its stimulating effect on the circulation, were the chief reasons for its employment. In the Paris epidemic, especially at the Hôpital Bonjean, injections of cocaine, in the dose of 3 cg. [= gr. ss] per day, were administered with excellent results. Rumpf found no benefit from nitro-glycerin, oil of camphor, and other respiratory stimulants. Trussewitch[2] advocates the use of nitro-glycerin—two drops of the centesimal solution at a time placed on the tongue—and the hypodermatic injection of ammonia. As the mucous membrane is desquamating, it were better, no doubt, to inject the nitro-glycerin or amyl nitrite beneath the skin, or administer the amyl nitrite by inhalation. From *a priori* considerations it would appear more useful to administer these agents after the operation of infusion by either mode—for there is apparently little utility in forcing the organs of circulation when the blood is so thickened.

For the cramps which ensue when the muscles are no longer supplied with blood, small doses of morphine subcutaneously are recommended by Rumpf and others. In the last epidemic preceding the present, chloral by hypodermatic injection was highly extolled by some observers. I have no doubt from my personal experience that it has great value, especially when combined with morphine and atropine. As the solubility of chloral is limited, ten grains at a time are all that can be given unless several punctures are made. The following is a suitable formula:

℞.—Chloral. hydrat. . . . . ℥iij.
Morphin. sulph. . . . . gr. j.
Atropin. sulph. . . . . gr. ¼.
Aquæ chloroformi } . . āā ℥ss.—M.
Aquæ }

Sig.—Twenty minims, repeated in ten minutes, and subsequently *pro re nata*.

It is usually better to give the chloral separately—ten grains dissolved in sufficient water—and the morphine and atropine together—from ⅛ to ¼ gr. of the morphine and from $\frac{1}{120}$ to $\frac{1}{60}$ gr. of atropine. The effect of chloral on the muscular cramp of cholera is highly satisfactory. The pain ceases at once, the pulse rises, and the breathing gains in depth and volume. The last case of cholera treated by me, and one of the most severe, seemed to be rescued from a fatal ending by chloral injections. In this case, with the coming on of the cramp, the pulse became imperceptible at the wrist, and the respiration almost ceased. When the action of the chloral was felt, the surface grew warmer and pulse and respiration became more active. As, however, morphine and atropine had been given, some share in the result must be ascribed to them.

There are many other methods of treatment of cholera, and various medicaments, to which I have not referred, but this paper has already gotten beyond the space it should occupy. There is, however, a practical point or two in regard to the dietetic management of the disease that I should not fail to mention. The attempt to feed a cholera-patient when the digestive tract is undergoing desquamation is worse than useless. Such a preparation as beef-tea is only harmful at any stage of the disease. A little cold milk or wine-whey may be given as the state of the stomach will permit. The profound depression that occurs in these cases is a constant

[1] Centralblatt für die gesammte Therapie; op. cit.

[2] Ibid., November, 1892; from the St. Petersburger Wochenschr., 1892, No. 36.

temptation to push the use of stimulants, and this practice is usually overdone. A moderate quantity of iced champagne, a little brandy in ice, may be given from time to time. Thirst is excessive, and the indulgence in water-drinking is likely to excite vomiting, but, as Rumpf says, the advantages due to the free use of water more than counterbalance the injury done by a renewal or an increase of the vomiting. Carbonic acid water may agree better than simple water, or such a mineral water as Apollinaris may prove less likely to disturb the stomach. As the renal function is suspended, or nearly so, and as during the typhoid stage the restoration of this function is of the first importance, the free use of diluents may prove in a high degree useful.

NEGLECT OF THE EARLY DIAGNOSIS AND TREATMENT OF PULMONARY TUBERCULOSIS.[1]

BY S. EDWIN SOLLY, M.D.,
COLORADO SPRINGS, COL.

THE great importance of the early diagnosis of pulmonary tuberculosis has been forced upon my attention by finding so many tuberculous patients seeking the climate of Colorado long after their chances of recovery in that or any other climate have gone by. Considering it a matter largely preventable, by the profession realizing more clearly the causes of the conditions that lead to this unnecessary and lamentable loss of life, I have analyzed the last one hundred cases of pulmonary tuberculosis that have presented themselves for examination.

This inquiry has nothing to do with the influence of climate at an altitude or elsewhere (and the cases that have been gathered in the last few months are not considered in any way as to the results of treatment), but was undertaken to find how far the early recognition of the disease and its treatment affected the condition in which the patient came under my observation.

After going carefully over the notes of each case I have made two classes. The *first class* includes those in whom the disease was diagnosticated and treated as soon as the symptoms, as described in the patient's history, showed the disease sufficiently developed to be recognized by any ordinary well-educated practitioner. By treatment as applied to this class is meant any means, hygienic, therapeutic, or climatic, that were seriously used—not that the treatment was necessarily of the best, but that the cases were taken in hand and the patient advised in a reasonable manner. The broad question of treatment or no treatment of the pulmonary tuberculosis is dealt with, and not its details or wisdom.

[1] Read before the Arapahoe County Medical Association, December 27, 1892.

The *second class* includes those in whom the history exhibits the fact that the disease was not diagnosticated or treated for a period varying from a few months to several years after the time that the real nature of the malady had clearly revealed itself. The hundred cases are not in any way selected, but are taken in the order of their examination, tracing back from the recent time when this inquiry was commenced, and were limited to one hundred simply on account of time and labor; but I believe that if an analysis of the notes of all of my first examinations during the past eighteen years, the period of my practice in this locality, were made, the main bearing of the facts would be found the same.

DIAGNOSIS AND TREATMENT were delayed in 52 per cent., while in 48 per cent. the disease was promptly recognized and treated. The total average of delay was two years.

SPUTUM-EXAMINATIONS had been made in only 42 of the 100 cases, and in 7 of these not until some time after the disease was well advanced; so that it may be said that in 65 per cent. this means of diagnosis was neglected when most valuable. Of the 48 cases in which the disease was recognized and treated early, the sputum-examinations were omitted in only 13, while in the 52 cases of delayed diagnosis only 7 examinations were made, and then too late to be of practical value.

STAGE OF THE DISEASE.—Of the 100 cases, 37 were in the first stage; 28 in the second, that is, softening had commenced; and 35 in the third, that of tuberculization, when cavities could be diagnosticated.

Of the first class, 23 were in the first stage; 11 were in the second stage; and 14 in the third stage.

Of the second class, 14 were in the first stage, 17 in the second, and 21 in the third; so that of those who were cared for early there were 48 per cent. in the first stage, while in the delayed class there were only 29 per cent. in the first stage when they came under my observation.

RESULTS.—It is demonstrated by the statistics set forth in my article on "Climate,"[1] that the proportion of cures among the cases in the first stage treated in high climates, such as Colorado and the Swiss Alps, is 62 per cent., while in the second and third stages, taken together, the average is only 15 per cent. These figures show how greatly the chances of recovery have been lessened by the delay.

FAMILY PREDISPOSITION.—In 50 of the 100 cases the patients showed a family predisposition to tuberculosis. In 141 cases that I have reported[2] the percentage was 58; Dr. Denison's 240 cases showed 51 per cent.; Dr. Fisk's 100 cases, 52 per cent.; Dr.

[1] System of Therapeutics, edited by H. A. Hare. Philadelphia: Lea Bros. & Co.

[2] Transactions Climatological Association, 1890.

Theodore Williams reported 44 per cent. among 141 cases, while in the 1000 cases collected by his father and himself the percentage was 48. These figures suggest that the percentage of these 100 cases now analyzed, viz., 50 per cent., is near the average.

In dealing with the question of family predisposition the degree of relationship is of importance; in these 100 cases, parents, grandparents, brothers, sisters, and two or more uncles or aunts, who had pulmonary tuberculosis, are considered as showing family predisposition. Family predisposition was found in 29 per cent. of the first class, while it was found in only 21 per cent. in the second class, viz.: those in whom there was delay. This fact tends to confirm the opinion that I expressed in connection with the 141 cases referred to, that the knowledge of an hereditary tendency makes the patients seek and receive earlier treatment, and also exhibit greater attention in following it out; consequently, better results are obtained than among the non-hereditary cases. In the class in which treatment was delayed the hereditary cases show that there were 29 per cent. in the first stage, while among the non-hereditary there were only 26 per cent.

The average delay among the hereditary cases was 2 years and 5 months, among the non-hereditary 1 year and 10 months. This fact suggests that the disease tends to run a more chronic course among the hereditary cases, which, if true, may be explained by the theory that the family predisposition acts often like vaccination or inoculation, in granting a modified protection, so that the disease is slower to advance. The slightly better results among the hereditary may also possibly be due to inheritance granting a greater power of resistance, as well as teaching greater caution to the individual possessing a family history of tuberculosis.

The whole question of family predisposition, however, requires much more analysis and discussion than the limits of the present article will allow, and its full consideration would lead us away from the more practical matter of how to secure earlier diagnosis and treatment of pulmonary tuberculosis. For instance, the late experiments of Héricourt and Richet[1] upon dogs, which indicate that inoculations with tubercle confer more or less immunity, bear upon the subject. Then, again, under cover of the title, family predisposition, we have two distinct possible causes, though they may be often, and are, perhaps, always more or less allied. These are the direct transmission of tubercle-bacilli through the placenta, or the milk, and the inheritance of a physique favorable to the reception and the growth of the bacilli.

[1] Gaz. Méd. de Paris, October 22, 1892.

If the family predisposition is shown in the parents, and possibly in the grandparents, assuming the tuberculosis to be latent in the parents, we might have direct transmission, with more or less inherited susceptibility of physique. On the other hand, if the family predisposition was shown only in uncles or aunts or brothers or sisters, a susceptible physique would appear to be the only cause through inheritance.

NATIVITY.—In 80 of the 100 cases the patients were natives of the United States; 20 were born in England. Fifty-five per cent. of the American cases showed a family predisposition, while it was exhibited in only 30 per cent. of the English cases.

From previous observations I am inclined to think that a similar proportion of hereditary cases will always be found among the English and Americans, though it requires a much wider analysis to confirm this opinion. In the first class, *i. e.*, those who received immediate treatment, the American hereditary cases were 70 per cent., the English 43 per cent., while the total proportion of Americans in the first class was only 44.5 per cent., and of the English the proportion was 70 per cent. These figures would indicate that among English tuberculous patients the disease receives earlier recognition and treatment; and this point is also brought out in my paper already mentioned, in which the results of treatment are also shown to be better among the English than among the Americans. All this tends to confirm the importance of early diagnosis and treatment.

DIAGNOSIS.—We now deal with what to many is as tedious as a twice-told tale—how to make a diagnosis of early pulmonary tuberculosis; for the handbooks of Da Costa, Vierordt, Fenwick, Tyson, and many others tell us well and clearly how to do this. But why is it not done? Ruling out the cases in which the physician is not consulted in time, or in which he is ignorant or deliberately indifferent, it appears to me, from inquiry into the beginnings of a large number of cases of pulmonary tuberculosis, that the chief reasons are as follows: Among many of the laity and a few of the profession there lingers the old idea that pulmonary tuberculosis is a hopeless disease, whereas of some 5000 cases treated in various parts of the world, including elevated regions, and many of them some years ago, when the treatment was inferior to that of the present day, about 47 per cent. of cures were in those who were in the first stage.[1] And I have no doubt that at the present time, with earlier diagnosis and wiser treatment, the showing would be better. As has been stated, those cases in the first stage that were treated in high climates show 62 per cent. of cures, while 87 per

[1] Article on "Climate," System of Therapeutics, edited by H. A. Hare, M.D. Philadelphia: Lea Bros. & Co.

cent. were benefited; so that I believe it quite reasonable to say that in early pulmonary tuberculosis the chances of recovery are at least equal, and the earlier the diagnosis is made the greater are the chances. The percentage among the averages alone, in which improvement takes place, is undoubtedly higher.

As these statistics include those very grave cases of acute tuberculosis, and those whose poor physique and other disabilities render their chances slight, the average of improvement is brought down considerably. One of the reasons why pulmonary tuberculosis was believed to be hopeless was that before Koch's great discovery a patient was not believed to have the disease until the consuming process was well advanced. We must remember how Niemeyer, writing of what he termed chronic catarrhal pneumonia, spoke of the danger of its becoming tuberculous, whereas now we know that tubercle either preceded the inflammation or was quickly engrafted on it, giving it its chronic character. Then the cases of limited tuberculosis, without marked inflammatory changes, which recovered were not considered tuberculous, and so, being eliminated from the count, did not help to lessen the average mortality from pulmonary tuberculosis. Again, the physician who makes such a diagnosis when the signs are slight is often considered an alarmist, and another is likely to be sought who will say pleasanter things. Besides this repugnance on the part of the physician to declare a patient to have a (supposed) well-nigh incurable disease, and the distaste on the part of the patient who feels comparatively well to believe such a declaration, there still linger among both physicians and their clients two great myths: first, that pulmonary tuberculosis is *necessarily* hereditary, and, second, that it *only* attacks those of weak physique, both of which fallacies statistics destroy. Again, it is often hard for the physician to get the patient to submit to a thorough examination when he seems, perhaps, to be so little ailing, and he is often unwilling to give proper compensation for the necessary time and skill to be expended.

It is so much easier and pleasanter for both parties that a simple prescription for a "cold" be given, that a short holiday be advised, and that it be said "you are all right," than that disturbance be created, that a lot of apparently irrelevant questions be asked, and that the physician be free of the suspicion, perhaps, of wanting to make a case.

It is not given to every practitioner to have the required experience or skill to become a refined auscultator; but he can collect the facts from simple questioning and observation, which, taken together, will seldom fail, if tuberculosis is present, to show him the "handwriting upon the wall."

The question is: How could the diagnosis have been made earlier, and much of the precious time while the disease was yet in the stage of tuberculization saved? Of course, there are cases in which no physician is consulted till the disease is developed; but far more often the tell-tale signs pass unheeded under the physician's very eyes. For instance, one of the most glaring and extremely frequent negligences is not to search into the cause of blood-spitting, to make little of it, and say: "Oh! it came from your throat." Now, bleeding from the throat is very rare, except in acute inflammation or grave affections, in which event the physician's care is also needed; occasionally it comes from the gums or nose, and rarely from the stomach, when other signs will reveal its origin; but an inspection is seldom made.

The lungs are frequently not examined, or only examined through the clothing, when the fine distinctions between the two sides, or the slight change in the character of the vesicular murmur, or the semi-paralyzed chest-expansion, are lost. Even when an examination is made by an experienced auscultator, the signs may be too slight to found a diagnosis upon, yet when coupled with some of the other symptoms, they put the patient at least under grave suspicion, and demand that the physician should watch for further developments. In the meantime let him induce the patient to at least observe the ordinary rules of health and refrain from any indiscretions.

There may be no cough or expectoration and no other signs in the chest, and yet a constantly rapid pulse, a slight rise in afternoon temperature, or a subnormal one before rising, a trifling dyspnea on going up stairs, a little decline in weight, some loss or capriciousness of appetite, or a tired feeling unusually early in the day, may tell the tale, and, in spite of the absence of local signs, are "confirmations strong as proofs of Holy Writ." There is no one of these indications alone to be trusted. For instance, though loss of weight is one of the most constant signs, it is sometimes absent, and owing to, perhaps, a cessation of work or better care of the health being taken at the time, there may be gain instead. In fact, there are cases in which there is very little, if any, constitutional disturbance, and yet pulmonary tuberculosis is established; but such cases generally have distinct local signs, being those in which the tuberculosis is grafted on a preceding pneumonia, bronchitis, or catarrh. In this event, however, there is more or less cough and expectoration, and the microscope will reveal the secret in the sputum.

Some acute affections, such as typhoid fever, may at the outset be mistaken for acute tuberculosis; but as in these conditions the patient should be

watched and taken care of, no harm is done by a short delay in the diagnosis.

If cough, without expectoration and with slight, if any, local or constitutional signs, has persisted, particularly if of a dry, hacking character, tuberculosis should be suspected—that is, of course, after the causes of reflex cough have been well looked into, such as a tickling palate, enlarged tonsils, or disordered stomach. If these do not reveal the cause, then it lies either in the lungs or in some other grave condition of reflex irritation, and the patient should still be watched and directed, not dismissed. When headache and lassitude are complained of in the afternoon or evening, the temperature should be taken; if elevated, the patient should be carefully watched, and before long the cause will be discovered. A chronic bronchitis, or a pneumonia, or a pleurisy that does not clear up should always be suspected, and the sputum examined. Night-sweats, however slight, are to be inquired into. The breathing should be tested by laying the hand lightly on the epigastrium, with watch in hand, while the patient is made to talk, so that his attention is occupied; if the number of respirations is not greater than, say, 22 per minute, the patient may be made to go rapidly up or down stairs, after which the examination is repeated. A red line on the gums next to the teeth, and curved nails or clubbed finger-ends, particularly when blue, are always suspicious. The Scotch say: "Many a mickle makes a muckle;" and so it is from the accumulation of these little signs that the grounds for diagnosis are obtained.

TREATMENT.—Concerning the general outlines of treatment: first, after studying the disease, observe the patient's habits of life, and wherein they are not only adverse to the cure of the particular malady but sin against the general laws of hygiene, and then as far as possible correct them. See first to the digestion, and then give all the nourishment that can be assimilated; keep your patient as much as possible in the air and sunshine; encourage moderate and regular exercise, but never of a sudden or violent character; let it be proportionate to his strength, and gradually increased; but it must be very limited when the heart is weak or there is fever, and should be abstained from when fever is present; have the skin kept active by daily washing or sponging, but beware of fatiguing or chilling ablutions; clothe in wool both day and night, and train him to bear cold; medicate for symptoms or on general tonic principles; and if so inclined, you may experiment cautiously with some of the alleged specifics, such as creasote, but I regard their claims as still *sub judice*, and only to be proved by comparative experiments on a large scale in hospitals. My experience inclines me to believe they are all of doubtful value as specifics, but I think patients often improve under special forms of treatment because of the interest and hope inspired when something is being done for them, and their attention is directed toward getting well, and perhaps more particularly because the physician is likely to see his patient more often and watch him more closely, and so give more heed to the details of his daily life, in the wise direction of which lies the secret of success far more than in any medication.

It must especially be remembered that all sorts and conditions of men may become tuberculous, and you must study the individual and his circumstances as well as the type and stage of the disease, before you can plan a rational and systematic scheme of treatment for him. All this enters particularly into the question of change of climate. The well-to-do, whose domestic ties permit it, are most safely advised to seek at once the climatic change best suited to their case, and where such luxuries as have become necessities to them can be obtained, providing that they are or can be brought into a condition to stand the change. There are many, however, who, on account of their circumstances, cannot leave home, and should not be forced to do so unless home-treatment is not succeeding. Hereditary cases should *always* be sent away. Cases arising where the conditions of life, except the climatic, are good indicate clearly the necessity of change. Cases following pneumonia, pleurisy, and bronchial catarrh, which are slow in clearing up, also should have change. In the hereditary the change must be permanent; in the second group often so; but there is a certain number of cases that have arisen under peculiarly unfavorable conditions of life, and in which removal would be a hardship, and which, if they can be placed under good hygienic conditions at home, instead of bad, can often be safely left, at all events, till some experience is gained of the tendencies of their case. Those also in whom the tuberculosis is not advanced or active, and whose depression of health appears due to digestion or other causes that can be treated at home, may remain and be watched for a time.

Often a change to a different house or soil or different surroundings, physical or social, will start a patient toward recovery, if conjoined with other wise measures. As to what climate should be sought must be decided not on the usual happy-go-lucky methods or from the results in a single case, but by studying the general principles of climatology, and then getting reliable information of the particular resort that is likely to be suitable. Climatology (of which the profession as a whole is grossly ignorant) is not the pure empiricism that many think, but is a science founded on natural laws, and strengthened by rational experience.

ULCER OF THE STOMACH.[1]

BY L. WOLFF, M.D.,

CLINICAL PROFESSOR OF MEDICINE, WOMEN'S MEDICAL COLLEGE OF PENNSYLVANIA; PHYSICIAN TO THE GERMAN HOSPITAL OF PHILADELPHIA; DEMONSTRATOR OF CHEMISTRY, JEFFERSON MEDICAL COLLEGE.

EROSIONS and ulcerations of the gastric mucous membrane often occur as a result of trauma, and, as was long ago observed, readily heal without presenting the characteristic symptoms of "ulcus ventriculi," also known as simple, round, chronic, peptic, corrosive, or perforating ulcer, according to its shape, extent, and the fancy of authors.

Cruveilhier (1829–1835) appears to have been the first to recognize it as an independent affection, and to define its pathologic character. The subject was further elaborated and brought to a clearer understanding by Rokitansky and Virchow, who explained it as depending on a disturbance of circulation, with necrotic changes in the tissues supplied by the affected vessels.

These views have, from time to time, undergone some modifications, so that now autodigestion of the stomach within a circumscribed area is accepted as the pathologic condition associated with the affection. This conception is based upon the assumption that under normal conditions the alkalinity of the circulating blood prevents autodigestion of the stomach, while with the cessation of the circulation after sudden death during the digestive process the stomach undergoes a greater or less self-digestion (gastromalacia.) Any disturbance of the circulation of the mucous membrane of the stomach, whether by hemorrhage into it or by embolic processes within its vessels, must therefore be regarded as a predisposing factor in the production of a peptic ulcer. The exciting element, as already stated, is generally considered to be the action of the digestive secretions on the area deprived of the circulating medium, which, both directly and by diffusion, maintains an alkalinity of the tissues not overcome by the ordinary amount of hydrochloric acid in the digestive fluids.[2]

The ulcer so formed is by no means always round, as an inappropriate designation might imply, but may be variously shaped. It has clean-cut edges, and, as a rule, a clean fundus. It is principally met with in patients between eighteen and thirty years of age, and is found more commonly in women than in men. It shows a tendency to extend in depth to a greater degree than in surface, and is often funnel-shaped. It is generally situated upon the posterior wall of the stomach, near the pylorus, and, as a rule, is solitary rather than multiple. Ulcers extending to the deeper layers of the stomach may give rise to perforation, which, if not followed by fatal peritonitis, may result in adhesions to neighboring viscera. I have recently observed such a case in which, at the post-mortem examination, extensive adhesions between stomach, liver, pancreas, and spleen were found.

One of the most characteristic and important complications of peptic ulcer is hemorrhage from eroded vessels, and the resulting hematemesis. This, in connection with the other symptoms, may be considered as almost pathognomonic.

The tendency of gastric ulcer is generally toward recovery. The resulting cicatrization may cause serious complications by stenosis of the pylorus, and consequent gastrectasis, or even irregular contractions of the viscus. A suggestion of importance is the possibility of subsequent malignant development in cicatrices.

By far the most important and gravest symptom is, without doubt, the excessive hemorrhage that at times occurs. Of forty-three cases of undoubted gastric ulcer that I have followed, both in my own practice, as well as in that of others, in no less than four did fatal hemorrhage result.

Hyperacidity is usually mentioned as an accompaniment of gastric ulcer, and considerable importance has been attached to it. It is true that in many cases the mechanical irritation of the eroded surface by the food causes increased peristalsis and hypersecretion; but in quite a number of cases that I have had the opportunity of examining with this end in view, I have found only normal amounts of hydrochloric acid after the usual test-meal, and it is to my mind doubtful whether the hyperacidity so often mentioned in connection with gastric ulcer is as common as it is made to appear. While gastric hyperacidity often produces intestinal indigestion and intestinal catarrhs, resulting in mal-assimilation, malnutrition, and anæmia, which in turn may cause disease of the vessels, and thus predispose to peptic ulcer, I have yet to find that hyperacidity is more common in patients with gastric ulcer than in other persons.

Among the symptoms most noticeable in connection with ulcer of the stomach, pain deserves first attention. It is true that cicatrices of ulcers have been found in stomachs of persons who have never been known to complain of gastric pain; nevertheless, the large majority of cases are brought to our notice by the circumscribed pain in the epigastrium, radiating to the back below the scapulæ. The pain is characterized by its paroxysmal occur-

[1] Read at a meeting of the J. Aitken Meigs Medical Society of Philadelphia.

[2] This is disputed by G. Bunge (Lehrbuch der physiologischen und pathologischen Chemie), who, while offering no other explanation than the resistance of the living cell, asks, in contradiction to the above, why the pancreas is not digested by its alkaline trypsin.

rence and its relation to the taking of food. Thus, coarse food or large meals may cause most distressing gastralgia, and even a moderate meal may give rise to burning pain, which is often accompanied or followed by great nervous anxiety and cardiac palpitation, so that the patient is compelled to loosen his clothing and assume the erect posture. Pressure in the pyloric region increases the pain materially, and may often lead to paroxysms of varying severity. Together with this, the patient feels nauseated, often vomits, complains of heartburn and acid eructations, which cease only with copious emesis of the acid contents of the stomach, generally brought on by the patient's own interference. The vomited matters may or may not contain bile, but they often contain blood in greater or less quantities.

The great diagnostic importance of hematemesis will be realized if we consider the statement that it takes place in from 40 per cent. to 50 per cent. of all cases of gastric ulcer. I think the diagnosis doubtful in cases in which blood was not vomited, and I consider these figures, therefore, unreliable, and the average as greater. When the hemorrhage is large, it may be followed by syncope, and certainly by nausea, and if frequently repeated the patient may sink from loss of blood, which may be expelled by the bowel as well as by the mouth. The dejecta, under such conditions, usually appear as a black, coherent mass, of soft consistence and tarry color, though unchanged blood may, in aggravated cases, be found therein. The ejecta are usually mixed with food, but may be pure blood, generally coagulated, dark, and often fetid, but never frothy, as in hemoptysis; nor is the ejection accompanied by the characteristic cough of the latter.

As hematemesis is met with in cirrhosis of the liver, malignant diseases of the stomach, toxic erosions, hemophilia, and may result from trauma from foreign bodies in the stomach, it is necessary to exclude these in basing a diagnosis of gastric ulcer on hemorrhage, principally or alone. As corroborative of peptic ulcer, in conjunctiom with other symptoms, may be considered the dyspepsia accompanying it. This is manifested by a capricious appetite or even anorexia, eructation and pyrosis, with the so-called "heartburn," which often leaves a sensation of acid acting on the teeth. Together with this, constipation is the rule, varied though at times with occasional diarrhea and the popularly so-call "bilious" spells, with frontal headache.

The chemical examination of the gastric secretions, which has to be conducted with extreme caution, shows, according to some authors, a hydrochloric hyperacidity of from 0.3 per cent. to 0.35 per cent., a finding however, with which, from my own observations, as already stated, I cannot agree. Thus I have found that many, if not one-half of the cases, show a normal acidity, or even occasionally a subacidity.

Measurement shows no ectasis and the motor functions are generally excellent and may be increased. The ectasis resulting from subsequent pyloric stenosis cannot be viewed as symptomatic of the acute affection, though hyperacidity itself may bring about pyloritis and consequent ectasis.

As symptomatic of ulcer and resulting from the copious hemorrhage must be mentioned the extreme anemia that frequently suggests malignancy. It is often difficult to differentiate this secondary anemia from that of the progressive and pernicious type. The recognition of carcinomatous conditions of the stomach, when associated with ulcer, is one of the most perplexing problems for the diagnostician. Fortunately, though the association does exist at times, it is rare. Thus, in a case under my care, the symptoms were those of ulcer alone, when, notwithstanding the fact that the patient had not arrived at the age when carcinoma is ordinarily suspected, it was found at the autopsy that malignant disease of the cicatrix was undoubtedly the fatal lesion.

The diagnosis of gastric ulcer cannot be made from any one symptom, but must be based upon the corroborative evidence furnished by the complexus of symptoms to which it gives rise. Thus the digestive disturbances and gastralgia, as well as the circumscribed pain on pressure in and below the right hypochondriac region, the paroxysmal character of the pain, principally after the ingestion of food, are sufficient to attract the attention of the diagnostician as suspicious of gastric ulcer. If, added to this, there is the characteristic hematemesis, the clinical picture may be considered to be complete. Though pain may be absent at times, the hematemesis alone, when other sources of hemorrhage can be safely excluded, may serve for purposes of diagnosis. The diagnosis cannot be considered as established when based on the pain in the epigastrium alone, and, in fact, no positive evidence may be had of the presence of ulcer unless the chain of symptoms is made complete by the occurrence of hematemesis.

Gastric ulcer must be differentiated from gastric carcinoma. It may be said that the age of the patient is important, ulcer being more common between the ages of eighteen and thirty, and carcinoma after forty. One may, however, be deceived, as in the case already quoted. Rapid emaciation, with cachexia, as well as the presence of tumescence in the right hypochondrium, bespeak carcinoma, although tumefaction may at times also be found with pyloritis resulting from ulcer, and may even be wanting in carcinoma situated on the greater curvature and posteriorly, as I have had occasion to observe. That a chronic affection of the stomach which continues

over a period of three years, and though accompanied with emaciation, but without cachexia and without a palpable tumor, may be viewed as resulting from chronic ulcer, can be accepted as a safe rule, but one which is not without exception. The presence of a more rapidly developing tumescence in the epigastrium may, however, always be considered as evidence of malignancy.

The prognosis of gastric ulcer may, in the main, be said to be favorable, though, as already pointed out, the occurrence of fatal hemorrhage and the complication of progressive anemia, as well as malignant complications, may bring about a moderate percentage of deaths. The proportion of deaths among the forty-three cases that I have followed corresponds with the general statistics recorded. The perforative ulcer offers very few chances, though it has been known to leave adhesions which in themselves may not prove fatal.

The treatment of gastric ulcer may be summed up in a very few words. The primary indication is physiologic rest. If we consider that the presence in the stomach of food and acid secretions stimulates peristalsis, and that peristalsis is adverse to the restorative process, the indications for the control of both are at once established. As an adjuvant to this end and of the greatest importance, is absolute rest in bed. This is necessary, not alone to limit the mobility of the viscus, but it serves the further purpose of preventing tissue-waste, when nutrition must necessarily be limited or inhibited altogether.

The rest of the treatment may be considered as dietetic and medicinal.

The dietetic management is of the greater importance. While absolute bodily rest is a factor not to be neglected, physiologic rest is best secured by withholding all food by the mouth, and the adoption of a system of rectal alimentation. This will be the better borne, as the bowels are usually torpid and constipated and the colon tolerates large quantities of food very well.

To make alimentary injections the flexible rectal tube should always be used, and then introduced beyond the sigmoid flexure. Before resorting to alimentary enemata, the colon should be well cleansed and emptied by a large clysma of tepid water. It is to be remembered that, though the colon is a powerful absorbing organ, it is not a digestive organ, and that all food introduced into it should be predigested. I have been in the habit of employing for this purpose the glucose syrup of the market. This I dilute with peptonized milk, to which is added a moderate quantity of peptonized beef-extract, or the so-called peptone powder offered by the manufacturing chemists. It is fortunate that these peptonized preparations contain little peptone and more albumose, for it is to the latter rather than to the former that we have to look to furnish nutritive albumin. It is a time-honored custom to add from twenty to forty drops of laudanum to such injections, so that they will be retained by the bowels. As opium and the opiates have probably but little local anesthetic effect, I have substituted for them half a grain of cocaine for that purpose, with the happiest results. Treated in this way, by giving two ounces of glucose with one ounce of prepared peptone powder in about four ounces of peptonized milk, together with half a grain of cocaine, about three or four times a day, I have seen patients thrive and even gain weight.

It is customary and it is recommended that in gastric ulcer milk be given in large quantities, and milk alone. In several cases so treated I have observed hard coagula of milk to be vomited, after great distress and with great retching, leading to copious hemorrhage. I should modify this method by giving only partially peptonized milk, which will be found not to coagulate on the addition of acids. To introduce milk into a certainly acid and sometimes hyperacid stomach seems to me a folly which is often dearly paid for. As a substitute for peptonized milk, buttermilk (though not as nutritious but more palatable) may be given, but in small quantities at a time. To vary this, home-made mutton-broths, prepared from stock as required, and into which one or two raw eggs are beaten, are to my mind, much more desirable and decidedly more palatable than the various beef-extracts often recommended. With the absence or diminution of pain after ingestion, this liquid may be supplanted by a little well-soaked cream-toast or milk-toast, a little finely-scraped meat (ham is preferred by some), some rice in milk, custards, or a very soft-boiled egg. If these are well borne, the diet may be gradually increased to stewed fowl, mashed potatoes, succulent vegetables, and progressively to ordinary light and full diet. Carbonated waters, champagnes, koumyss, are generally not well borne and are contra-indicated.

The medicinal treatment demands, by the indications, first of all, alkalies, evacuants, correctives, and measures adapted to meet the complications. Probably no remedy has greater repute in this affection than the salts of the waters of Carlsbad. These should be given in hot water, while the patient is fasting. To avoid nausea, the dissolved salts should be administered in broken doses only. While much is said in favor of the natural salts, I find the artificial product equally as efficient and therefore, sometimes, preferable. A teaspoonful of the latter generally suffices for the purpose of a mild laxative. To assure alkalinity, and neutralization of the acid secretions of the ulcerated surface,

nothing has served me so well as sodium bicarbonate in doses of from fifteen to twenty or even thirty grains, about from half an hour to one hour after the ingestion of food or liquids, and this may with advantage be combined with bismuth subnitrate. Calcium carbonate and also magnesia are recommended for this purpose, but, in my experience, nothing is so well tolerated by the stomach for any length of time as sodium bicarbonate.

To combat the nausea and vomiting, a pill containing extract of belladonna, gr. ⅛, and silver nitrate, gr. ½, may be used with advantage; the latter is said to exercise a curative influence on the ulcerated surface, and by being converted into an insoluble chlorid, diminishes or neutralizes the hydrochloric acid present in the stomach. Pain is best combated by means of subcutaneous injections of morphine. As these may, however, be too frequently called for and lead to a habit not easily broken off, I prefer a pill containing morphine sulphate, gr. ⅛; cocaine hydrochlorate, gr. ¼; extract of cannabis indica, gr. ½, given every three or four hours, after the ingestion of food or liquids. These analgesics may with advantage be supplemented by warm poultices or even warm Priessnitz applications to the epigastrium.

To meet the most serious complication, that of hemorrhage, gallic acid, internally, and ergotin or fluid extract of ergot, hypodermatically, may answer. Pieces of ice should be frequently swallowed. Absolute rest is the *sine qua non*. Should the hemorrhage persist in spite of these measures and assume alarming proportions, Monsel's solution, in doses of three or five drops in a wineglass of water, may be administered every quarter or half-hour. Oil of turpentine and the oil of Canada fleabane are often recommended as hemostatics, but my experience with them in this affection has not been encouraging. If the anemia has reached an alarming degree, and if cerebral anemia is apparent, injections of ether and camphor may be practised, followed, if necessary, by subcutaneous infusion of a sterilized solution containing 0.6 per cent. sodium chlorid, at a temperature of from about 100° to 103°. As much as a pint of this may be injected into the subclavicular spaces, from which they are absorbed with remarkable rapidity. For perforation, little can probable be done, excepting absolute rest and the exhibition of cardiac stimulants hypodermatically to combat shock, together with the narcotics necessary to arrest pain.

This brings me to the surgical aspect of the treatment. With the present vast advances in abdominal surgery, may we not look hopefully for good results from surgical interference, both in chronic ulceration as well as in uncontrollable hemorrhage? not to speak of the certainly indicated surgical procedure in perforation of the stomach. The good results of Loretta's operation in pyloric stenosis foreshadow a wide field of usefulness for its application to serious cases of peptic ulcer and its more serious complications.

THE PRESENT STATUS OF DRAINAGE IN SURGERY.[1]

BY A. M. CARTLEDGE, M.D.,
OF LOUISVILLE, KY.

THE title of this paper, while seeming to embrace the entire subject of surgical drainage, is intended to refer to the question of primary wound-drainage. Our present knowledge of the principles upon which success in the treatment of septic wounds is founded will not permit of even the dream that artificial drainage can ever be eliminated from our resources as a secondary measure in wound-therapeutics; hence secondary drainage or pus-drainage will not be discussed here.

Before the researches and work of Chassaignac, medical history gives us little accurate data as to the progress of drainage through the past ages. We are enabled to trace the principle of drainage in the work of our forefathers in surgery by a continual warfare, with first one and then another faction in the ascendency, as to the relative advantages of the open and closed method of wound-treatment, which was but the expression of a sentiment for or against primary wound-drainage. With limited exceptions, the efforts of older surgeons to establish primary drainage partook of the natural variety, content to accomplish their purpose by so shaping incisions as to facilitate discharge, or by the practice of a partial or complete open method of treatment. I say this was the method, with limited exceptions, for we do find mention of the introduction of pledgets of lint and gauze as a primary procedure, though the purpose and limitation of these measures were poorly understood. As a matter of fact, the prevailing idea was that they gave an exit to products of inflammation, and they were left in the wound long enough to provoke what it was intended to relieve. To the great discredit of some modern surgeons, traces of this combined primary and secondary drainage, or perversion of drainage, are still to be found at the present day.

Interesting and instructive as it would be to trace the great principle of drainage through the network of advances in past surgical progress, it is not of direct and practical importance enough for our present purpose. The subject of primary wound-drainage may be said to be under very active discussion at the present time. It is true the argument

[1] Read before the Southern Surgical and Gynecological Association.

is, in some respects, a subdued one, for men naturally hesitate to take sides against a measure which every surgeon recognizes has been second to none in saving human life; yet, within the past two years, and especially within the past twelve months, we have all seen in the journals and society reports long lists of operations, all with the ever-inserted line "Closed without drainage." Converse in private with almost any one of the authors of such a paper, and you will find him more bold, probably admitting that he believes the time has arrived in wound-treatment when primary drainage can be dispensed with entirely.

We all know that beneficial as drainage is, and has been to our art, yet it is not without its evils; that in its application we either introduce into wounds a foreign substance, or at least an objectionable material. Hence we hail such expressions as at least prophetic of the time when our ideal shall be attained; when the brilliancy and achievements of modern surgery shall have forever reduced the open wound to the benign conditions of a subcutaneous one. Again, in accounting for the facts contained in such assertions as those referred to, we attempt to explain by the different conditions that probably surrounded the work of such men; the nature of the operations performed must have been very different from that of those encountered by men doing a different line of work, or general surgery. In others such reports tend to create a feeling of dissatisfaction with their own work (a good feeling to have produced at times), probably mingled with the disagreeable thought that they are not in the front file.

After twenty-two years of the more or less scientific use of primary artificial drainage in open wounds, we are confronted with the question: Is drainage a necessity; if so, when, and what is the best method of practising it? The reply to the first part of our question involves a brief *résumé* of the principles upon which primary drainage is founded. Such drainage is intended to convey from cavities and recesses of wounds, blood and serum. When the physiologic time for this has expired, the function of primary drainage has ceased. This time, with rare exceptions, is fairly definite, and is between twenty-four and sixty hours. To wait longer is to encourage trouble by the maintenance of a disagreeable guest; to remove before the lapse of twenty-four hours is taking risks not warranted in the premises. When the surgical conditions are such as to give evidence that its work is accomplished, the drain should be removed.

Primary wound-secretion is justly accredited with being the nidus or soil upon and in which multiply and develop the noxious agents so inimical to healthy wound-repair; hence the limitation of its production, its sterilization or its removal by some channel from the wounded tissue becomes a surgical necessity based upon the soundest surgical science. If we secure a limitation in the production of serum, or its sterilization *in situ*, is the successful progress of a wound assured without drainage? As to the first, we answer unhesitatingly "Yes." The nature and extent of a wound, the character of tissue involved, or both, may be such that with careful aseptic precautions and thorough hemostasis, the production of serum is practically prevented—at least as a factor in disturbed repair; hence, drainage is not only superfluous, but detrimental. In the more extensive wounds, we have in the buried gut-suture a means of the greatest value in enabling us to dispense with drainage by obliterating spaces, securing compression and rest, and thus preventing pernicious collections of serum. If we ever expect to succeed in the successful and uniform closing of large amputation-wounds without drainage, I feel satisfied that it can only be accomplished by means of the deep buried suture, which obliterates the deeper parts of such wounds. Other means, while often successful, are not attended with the positive and uniform results that should characterize most modern surgical work. In this connection it may be added that the same principle of deep suture may often be carried out by greater attention to extraneous means of compression by gauze compresses, which, by compression from without, tend to obliterate internal spaces. As an accessory means of limiting serous exudation must be mentioned the necessity of a more general use of measures of immobilization in soft-tissue wounds, and thorough attention to systemic or alimentary drainage. Thus, when the production of serum can be limited, other things being equal, drainage may be dispensed with.

Secondly, Will the sterilization of serum *in situ* assure the progress of a wound without disturbance? Let us dwell upon this a moment, for in the elucidation of this point rests the chief answer to the question: "Can drainage be dispensed with?" To illustrate this point, we will suppose a wound under the following favorable conditions: Perfect sterilization of all tissue adjacent and in the lines of continuity; perfect sterilization of everything brought in contact with the wound; perfect hemostasis; perfect approximation of the skin and superficial structures, and perfect protective dressings. The only undesirable feature about such a hypothetic case as that stated is that there are deep spaces and pockets in which serum accumulates.

With all the aforestated favorable protective conditions, it is reasonable to suppose that this serum is as unoffending as in a subcutaneous wound. We grant that it may, indeed the probability is that it

will, if in sufficient quantity, mechanically excite such irritation as may bring into being two latent elements of disturbance. The first of these is to be regarded in the knowledge that no wounded tissue, once exposed to the air, other than that of the highest mountains, or mid-ocean, is perfectly free from contamination; it probably has lodged in it pus-forming microörganisms deposited by the air, yet in such limited quantity that if further ingress is excluded, and not too much and luxuriant soil provided for their development, the vital resistance of the tissues is able to take care of them. Again, it is not safe surgery to tempt the lonely microörganism in his occasional voyages around the blood-circuit, with large and fertile fields of even sterilized serum, pent up in tissues and cavities of the body. As practical surgeons, we should ever remember that the aspiration or drainage of a hydrops articuli or pleuritic effusion probably saves the patient from a future purulent accumulation, with all of its disastrous attendants. Then tension may, by irritation, convert an accumulation of serum into a dangerous wound-disturbance, calling into activity latent microörganisms which would otherwise have been disposed of by the tissues. Lastly, in this connection must not be forgotten the fact, that primary wound-secretion, though so protected as to be a barren soil for the growth of disturbing agents, may, by its mechanical effects, be fatal to the functional interests of certain wounded structures, notably the brain and cord.

To this, the first part of our query, and one that the idealist in surgery is almost answering in the affirmative, we say "No." I have not dwelt upon the greatly differing conditions that exist between the work of the specialist and that of the general surgeon, or, more properly, the conditions that confront us in accidental surgery in contradistinction to surgery of selection and timely preparation. These differences readily suggest themselves to the practical general surgeon who has to deal almost daily with contused and lacerated wounds, the result of machine or railroad accident, where gross dirt and foreign bodies constitute no small element in determining the necessity for drainage, if good results are to be expected.

The second part of our question: "When shall we drain?" has been anticipated pretty largely in the previous discussion of the necessity for drainage. A proper appreciation of the function of drainage; conditions which surround the wound and manner of infliction; the perfectness of our appliances, and the constitution of the patient will be the chief determining factors. The axiom in abdominal surgery, "When in doubt, drain," is a most excellent one in general surgical practice, unless, like some surgeons I have known in abdominal work, always doubting. Probably we shall best know when to drain by formulating rules when not to drain. If the deeper parts of a wound can be approximated; if pockets and recesses can be obliterated by suture or compression; if the conditions favor natural drainage, dispense with drains. The buried suture will eliminate in a scientific way more drainage-tubes than any measure we are now acquainted with.

How shall we drain? Shall it be by tubular or capillary means? With material of an absorbable kind, or material that can be removed from the wound after its function of drainage has been performed? To answer these questions, let us again think of the purposes of primary drainage, and we shall see that a failure upon the part of the profession to appreciate the best forms of drainage is due to the want of knowledge in its management. If the surgeon knows how to manage drainage when once established, he will not be long in discovering the best material, at least for his own use. As between tubular and capillary drains in other than wounds of cavities of the body, it seems the preference should always be given to those acting by capillarity. With a thorough appreciation of the time required for primary drainage, and a knowledge of how the fluids, blood and serum, escape from wounds, there does not seem a valid reason why rubber tubes or absorbable tubular drains should ever be used. Certainly, when possible, preference should be given to a material the removal of which does not excite disturbance in the wound; also to material that so closely approximates the tissues in its composition as to permit of its softening, liquefaction, and final absorption. Such a substance is found in catgut strands. In large wounds, with free secretion, six or eight threads of large gut, made to traverse the entire deep part of the wound, and projecting from both angles, will drain it more effectually and more certainly than a fenestrated rubber tube of one-third inch in diameter. If there is any difficulty from bowing or fixing just where wanted, the method of Mr. Chiene (in which the strands of gut are tied in a bundle by a strand around the middle, and these with a needle attached sewed into the bottom of the wound) may be practised. Such a drain does not become plugged by blood-clot, and by virtue of its capillary action it will decant fluids from the bottom of pockets when a tubular drain would not. It is painless, for it does not produce compression; it does not soften too soon—*i. e.*, before its function is fulfilled. No dressings have to be disturbed for its removal. It lessens the paraphernalia of the surgical outfit, and is thus an element of simplicity, which, in turn, is one of the greatest elements of safety in surgical practice. The same bottle may contain the materials with which you tie the bleeding vessel, make your drain, approximate the wounded

surfaces, and which you again use as buried suture to prevent drainage. The size of the gut used, as well as the number of strands, should be proportioned to the size of the wound to be drained.

If there is troublesome parenchymatous hemorrhage, or oozing from a large denuded surface, and it is desirable to combine drainage and hemostasis in the same measure, strips of iodoform-gauze form the best method of primary drainage. In all other surgery, with the exception of the cavities of the body, the catgut strands are to be preferred.

SUMMARY.

1. The principle of artificial drainage in surgery, while very ancient, was imperfectly understood, and was oftentimes as much a factor for evil as for good.

2. Though our knowledge of the principles that govern a healthy regeneration of wounded structures has greatly advanced, and our progress in wound-therapeutics has kept pace, we fail to appreciate how artificial drainage can be altogether dispensed with in surgical practice.

3. To lessen the use of artificial drainage it is necessary to thoroughly apply the principles of asepsis and antisepsis, combined with buried sutures, fixation, and alimentary or systemic drainage.

4. If for any reason the exudation of serum cannot be controlled, its removal by drainage is a safer surgical measure than any attempt at sterilization *in situ*.

5. The time required for primary drainage is from twenty-four to sixty hours; to wait longer is to encourage trouble; to remove sooner than twenty-four hours is to take unwarranted risks.

6. Capillary drainage is to be preferred to tubular drainage in wounds other than those of the large cavities. For this purpose absorbable material should be selected, catgut being the best.

7. When it is desirable to combine hemostasis and drainage in the same measure, the strips of iodoform-gauze, as recommended by Mikulicz, fulfil a most useful purpose.

8. When natural drainage can be utilized without producing unsightly cicatrices, artificial drainage should be dispensed with; when feasible, the two should be combined.

9. Wounds involving the brain and cord had best be drained, to avoid mechanical violence to the function of delicate structures by retained serum.

10. Necessity for artificial drainage will most often arise in wounds invading the large cavities; herein flexible, tubular, glass drains best meet the requirements, aided or not by materials acting by capillarity.

11. The method of secondary suture after primary wound-secretion is over, advised by Kocher, seems to possess no advantage over drains that have to be removed, and certainly is not to be compared in convenience, comfort, etc., with the patient, to absorbable capillary drains.

A Tribute to Villemin.—The Leconte Prize of $10,000 has been awarded to the heirs of the late Professor Villemin by the Paris Academy of Sciences, for his researches on the infectiousness of tuberculosis.

ORIGINAL LECTURES.

HYSTERICAL SINGULTUS.[1]

BY PROF. CHARLES G. STOCKTON,
PROFESSOR OF THE PRACTICE OF MEDICINE, BUFFALO UNIVERSITY.

THE patient, Bertha W., nineteen years of age, is an unmarried German girl, a servant, of good family history. She came to this country eighteen months ago. She had had no previous illness. Two weeks ago her brother died of diphtheria. She began feeling ill five days ago and commenced hiccoughing; this has been kept up continuously ever since, in spite of the remedies of three physicians who attended her before she entered the hospital. She has not vomited, nor has she eaten anything since admission, two days ago. There has been intense headache since the hiccough commenced. The bowels are habitually constipated. She was given a high enema, containing ten grains of ox-gall, and has had twice daily and twice each night high enemata of mistura asafetida, ℥vj. Morphine has been administered in doses of gr. ¼, increased to gr. ⅓, and repeated as soon as the hiccough would begin again. Last night she slept four or five hours without hiccoughing, but began again as soon as she awoke. To-day she has taken a little milk.

This affection is a form of neurosis, technically known as singultus. The elements of hysteria seem to be present, and, in the disturbed state of her nervous system, it is easy to understand that from the excitement of the serious illness and death of her brother, some manifestation of hysteria might be established. You will ask me if singultus is not always a nervous disturbance, and it will be well to discuss that question briefly before entering on a minute study of this case. Hiccough is not a cough; it is quite the opposite. In coughing there is a violent expulsive effort on the part of the lungs, with a sudden partial or complete closure of the glottis. Singultus is a sudden inspiration by a spasmodic contraction of the diaphragm, with partial or complete closure of the glottis, giving rise to a peculiar gulping sound. Undoubtedly at times the glottis closes completely with a sharp sound, while at other times it is partly closed. I think it is due to the varying tension of the vocal cords that we have the different degrees and qualities of the sound.

Leaving out of consideration the ultimate causes, let us study the method in which singultus is produced. The diaphragm is innervated by the phrenic nerve, which springs from the fourth and fifth cervical. It is a mixed nerve, having both motor and sensory fibers, and it receives branches from the sympathetic. After passing over the lung and through the mediastinum it spreads out over the diaphragm and communicates with the solar and splanchnic plexuses. It is open to influences in a variety of ways, both through the cerebro-spinal and the sympathetic systems.

Hiccough may be produced by spinal or central nervous diseases; it may occur in ascending myelitis, in an uncontrollable form and often being the last of the patient's symptoms. Cerebral irritation, as by a tumor, or irritation along the course of the nerve, by the pressure of medias-

[1] Delivered at the Buffalo General Hospital.

tinal tumors, abscesses, enlarged lymph-nodes, effusion in the pleural cavities or pericardium—any of these things may also cause singultus. Irritation of the esophagus may be communicated to the phrenic, and thus hiccough is frequently set up by the effort at swallowing dry substances. Diaphragmatic pleurisy or subdiaphragmatic abscess may also be attended by singultus. Gastric diseases, often mild forms of indigestion, may give rise to hiccough, on account of the communication of the phrenic with branches from the solar plexus, which supplies the stomach. As the innervation of the various abdominal organs is more or less connected, irritation of almost any of these organs may cause singultus. Finally, we may have hiccough entirely as a reflex from uterine disease, spinal irritation, disease of the urethra, etc., just as asthma may be produced from disease of the nose and other remote lesions.

Singultus frequently comes on in certain conditions of nervous excitability of the nervous system. Children are very prone to hiccough, and mothers are accustomed to overcome this symptom in babies by giving a teaspoonful of cold water, or a few grains of sugar, to stimulate a reflex by the act of swallowing. Almost any reflex spasm usually serves to stop a hiccough, for it is a curious fact that one spasm may be overcome by establishing another. The vegetative nerves are extremely active in children, and all reflex and spasmodic phenomena are more often seen in children than in adults, whose nervous systems should have become more composed and developed. When, from any cause, the nervous system becomes perverted and over-susceptible, then reflexes and spasmodic states are more easily developed. A man, for instance, who has overtaxed his nervous system by any form of dissipation has more easily excited reflexes, and you all know how common hiccough is in drunkards. Overwork, loss of sleep, long-continued watching or anxiety are also predisposing causes of this kind of nervous phenomena. Acute illness also greatly strains the nervous system, and any such reflex spasm as hiccoughing is more easily set up and is controlled with more difficulty than when it occurs in the healthy individual. Among the most common general condition that predisposes to hiccough is hysteria, and in such a case the hiccough may become a symptom of so great importance as to constitute essentially a disease.

Here we have a young German girl who has lived for several months amid unfamiliar scenes, and among people speaking a strange language, who has been excited and exhausted by the sickness and death of her brother. You can readily understand the predisposition to some form of spasmodic trouble. You can also understand how the hiccoughing once set up would tend to continue, and how it would wear out the patient's strength, and render nourishment difficult, if not imposible. By gradually weakening the heart, even hiccough may put an end to life, and the condition in this instance has been considered so serious by several physicians that, after doing their best to improve the girl's condition in her lodgings,they have sent her to the hospital, in order to have everything possible done for her.

While I have been talking you have noticed the continual hiccough. You may not have noticed that the color of her hands was improving, and now, on feeling her pulse, I find it has become stronger, probably because appearing before you has excited her and stimulated her circulation, and partially counteracted the effect of the morphine. A careful examination of the reflexes is impossible, as she holds the legs firmly, and is evidently too much excited to relax her muscles. At several points on the face, hands and feet there is insensibility to the prick of a pin. When she entered the hospital several anesthetic areas were noticed on the left side, and the left conjunctiva was also anesthetic.

The treatment should be directed to control the spasm, and meanwhile to control the hysteria. For the latter I do not think there is any one drug that will compare with asafetida for controlling the symptoms, or, in fact, the disease itself. In any case of hysteria I advise giving asafetida in large doses. The officinal five-grain pill is perfectly useless. The mixture, or milk, should be given by the mouth, an ounce every hour, extending the interval to two hours, when the effect is noticed, and gradually extending to an ounce every four hours. This treatment should be maintained for a month or more. If the patient cannot, or will not, take asafetida by the mouth, give it by the rectum. It is in this way that this patient is being treated, with the object of controlling both the symptom of singultus and the hysteria.

Meanwhile, we must insure her rest, even at the expense of giving her large doses of morphine. Nourishment must be pushed as far as possible, realizing the difficulty of doing so in persons partially under the influence of morphine, and especially when swallowing is as difficult as it is in this case. Alcoholic stimulants may also be given with benefit. If not succeeding with morphine, one may add atropine, $\frac{1}{100}$ grain doses. Sometimes camphor in large doses will control hiccough when other remedies fail. Amyl nitrite, nitroglycerin, chloroform, or ether, are sometimes efficient. Musk has been largely used, and has been said to be a specific for hiccough, but it is nothing of the kind. Few druggists keep it, on account of the expense, and it is likely to be sophisticated. From ten to thirty grains of good Siberian musk would cost ten or fifteen dollars, and to saturate the system thoroughly with it would be more expensive than the "bichlorid of gold" cure. It is a good medicine, but its success is by no means so phenomenal as the textbooks would lead us to think. Castor is also good in the same way as musk and valerian and others of the same class. Asafetida is just as good, is much less expensive, and is not so offensive to smell as musk.

There are other contrivances for the treatment of singultus aside from drugs and foods. Sir Morell Mackenzie has said that if sneezing can be established in a person suffering from hiccough, relief can be obtained. Yesterday I tried to make this girl sneeze, without success. Her nose was tickled, she was given snuff—and she understood snuffing thoroughly, and filled both nostrils well—but without effect. I dare say there is some way of making her sneeze, and before we are done with the treatment we shall try the experiment again. I have no doubt that if we could only make the patient sneeze we could temporarily control the hiccough in the same way that a mother controls it in her baby, by setting up a reflex swallowing by means of water or a little dry sugar. You may ask why I do not attempt choking the

girl by passing the stomach-tube. That might be worth while; but I doubt if it would control permanently such severe hiccough. Faradism may be tried, passing the current through the diaphragm, and causing a tonic spasm of that muscle, which would control the clonic spasm of hiccoughing, at least temporarily. Others have a way of making strong pressure over the diaphragm with the hands clasped just beneath the ensiform cartilage, or pushing the hands up under the ribs, or by compressing the chest with a rubber bandage. The alternate hot and cold douche may sometimes be used with good effect. The actual cautery or other powerful counter-irritation over the pit of the stomach may afford relief. But all these measures are not sufficient for extreme cases. About the only practical treatment, then, for them is to give some drug that will keep the patient still, and some other drug that will stimulate and support the nervous system while waiting for Nature to do that something which will control the spasm of the nerve.

CLINIC HELD ONE WEEK LATER.

Here is the patient who was presented to you last week with singultus. She now makes—for your benefit—a little motion suggesting hiccough, but this is the only evidence of the trouble that I have seen for several days. I suppose the suggestion of coming before you has been quite enough to develop it. The treatment has been the use of asafetida, and, instead of the morphine which I suggested to you, I changed to chloral the same day on which you saw the patient, because the effect of the morphine given the night before the clinic had not been pronounced. At the suggestion of Prof. Cary, a little measure has been used which has stopped the spasm temporarily on more than one occasion: this was the injection of ice-water in the region of the diaphragm.

BRACHIAL PALSY FROM FRACTURE OF THE CLAVICLE—ISCHIO-RECTAL ABSCESS.[1]

By THOMAS H. MANLEY, M.D.,
OF NEW YORK.

The first case to be operated on is one of an unusual description, interesting in many important particulars.

The history is briefly this: The patient always enjoyed good health until two months previously, when, while on a debauch, he sustained a fall on his left shoulder, and immediately noticed that the left arm was powerless. Believing that he had a severe injury, his friends brought him to the out-door department of Harlem Hospital, where it was discovered that he had a fracture of the clavicle near its acromial extremity. The fracture was adjusted, and the man was told to come in again, after some days; but he failed to return as requested, though he put in an appearance after six weeks, when the arm related to the fractured bone was found entirely paralyzed. He said that the day after his shoulder was dressed he tore away the bandages and went to work, and had little inconvenience for four weeks, when the arm commenced to be painful and weak, and, in a while, was entirely helpless.

[1] Clinical lecture delivered at Harlem Hospital, New York.

Now, the question arises, What is the nature of the paralysis? Is it central or peripheral, primary or traumatic? The first proposition may, for many clear and obvious reasons, be readily eliminated. Bearing in mind the fact that the treatment of the fracture was totally neglected, its situation, the marked displacement of the fragments, with the large mass of osseous proliferation and callus, it is clearly evident that the marked muscular atrophy and motor palsy are wholly attributable to mechanical pressure—a condition not unlike what we may see in cases of osteo-sarcoma springing from the upper free surface of the first rib, at the part over which pass the neural and vascular supplies to the arm. We have, then, a compression of the tubular structures and nerves by excessive formation of a vicious callus.

The cause of the trouble being apparent, the next question that arises is, How shall it be dealt with? In the present instance, as the extent of deformity is so great and as the trophic changes in the soft parts are so marked, the rationale of treatment is clear, viz.: cut down, chisel away the excess of callus, re-fracture the bone with an osteotome, and so adjust the fragments as to aid in the full functional restoration of the shoulder and remove all pressure.

Though the indications are clear for surgical interference, their execution is full of difficulty and danger. When it is borne in mind that at this point the inferior surface of the clavicle is practically a part of the superior and anterior boundary of the pleural cavity; that the bone lies immediately over the brachial plexus and the subclavian artery and vein, it is at once apparent that we must proceed with skill and caution, so as not to infect the pleural cavity or wound those great blood-trunks which, in this situation, closely hug the bone.

I intend to make a long free incision over the long axis of the bone, and by keeping close to the new bone-formation, after stripping away the insertions of the subclavius and pectoralis major, avoid inflicting damage upon adjacent parts. This having been accomplished, with a sharp, strong, osteotome the callus is excised, when the sharply-cutting convex ends of the united fragments are raised on a strong periosteum-elevator, sawed in two with a metacarpal saw, and sufficiently gnawed away with the rongeur to permit the ends to come together without strain or pressure. Now, a small wire suture is passed through the ends of the bone and fixed. The wound is closed without drainage.

The next patient is a young man of twenty-three years, with a tuberculous history, who is suffering from an ischio-rectal abscess.

This young man has been sent for treatment for piles: it is quite certain that there is some type of hemorrhoidal disease, but the general condition and local examination betokens something else. The patient has a large pus-accumulation, evidently of hemorrhoidal origin; the pile first becoming inflamed, then suppurative changes occurring and making their way through the walls of the bowel into the loose cellular tissues. In connection with operative procedures, the question arises as to how we should deal with these cases to the best advantage.

Should we be content with making a free incision and draining away the pus, or should we search for the opening in the rectum, and do, at one sitting, the combined

operation of evacuating the pus and splitting up the fistula? Much may be said for and against either procedure, but my preference in all cases of this kind is to be content with making an opening into the abscess. My reasons for this are that if the internal opening is high up, by division of both sphincters incontinence of feces may follow, or, what is very common in cases of strumous rectal fistulæ after operation, we may have great difficulty in healing the wound made, and it scarcely closes before another fistula appears. And I may say here that, should an anal fistula follow, I shall, with him, pursue my common rule with this class of cases—viz., if it gives rise to no pain or serious inconvenience, I shall let it alone.

P. S.—The operation in the first of the above cases was followed by the most satisfactory results. There was no surgical fever, no hemorrhage, no pleurisy, and in two weeks the patient left the hospital with full functional restoration in the arm and hand.

The patient with the abscess left the hospital with a small painless anal fistula.

CLINICAL MEMORANDA.

SYMPHYSIOTOMY IN PRIVATE PRACTICE.

BY HARRY McKENNAN, M.D.,
OF PARIS, ILL.

THE report of the following case of symphysiotomy is of interest from the fact that the operation is a new one to American obstetricians (this being the fourth recorded case in America), and because it occurred in private practice, in a small house of two dingy rooms, where there were no conveniences and but few necessary comforts.

Mrs. S., thirty-one years old, 4½ feet tall, of an average weight of 102 pounds, and with an antero-posterior pelvic diameter of 2¾ inches, had been delivered twice previously, and each time of a dead child, craniotomy having been necessary.

On the night of December 15, 1892, at about 11 o'clock, the patient began to have labor-pains. Eight hours afterward I was called. Upon examination I found the os well dilated, the membranes ruptured, and the cord prolapsed. The head could be reached by my finger, but on account of the small pelvic inlet, it could not be made to engage. The cord was returned, and Dr. Z. T. Baum (who had been present at her two previous confinements) was called. Symphysiotomy was decided upon, and Dr. W. H. Ten Broek was asked to assist in the operation. At 10.30 A.M. the pubes was shaved, and the parts thoroughly washed, first with soap and water, and afterward with a solution of mercuric chlorid 1 to 2000. Chloroform was given and the operation was begun.

An incision was made over the symphysis, and the attachments of the recti muscles were divided sufficiently to allow my forefinger to pass under the symphysis. A strong probe-pointed bistoury was then introduced, but, to my disappointment, I found that the union between the pubic bones was too firm to be overcome by such a knife; and I was compelled to lay it aside, and make use of a narrow probe-pointed metacarpal saw. (I had ordered of the instrument-maker a Galbiati's knife, but it reached me by mail an hour after the operation had been completed.) The saw worked nicely, however, the point being well guarded by my finger, while an assistant with a catheter in the urethra pressed the soft parts back and to one side. What little débris was caused by the saw-teeth was carefully washed away, and the wound was covered with iodoform-gauze. By the time the symphysis was cut through the child had so changed in position that the head lay in the right iliac fossa, with the left arm protruding its full length through the os, and the cord prolapsed. The cord was returned, the arm replaced, and cephalic version was performed.

Version was easily accomplished, owing to the impossibility of the body or head of the child engaging in the superior strait. As soon as the head was again in position, the forceps was applied, and I then asked Dr. Baum to deliver, which he did very rapidly on account of the prolapsed cord, the pubic bones gaping about three inches. The wound was then thoroughly cleansed with solution of mercuric chlorid 1 to 3000, stitched with silk, and covered with iodoform-gauze held in place by adhesive strips. The hips were bound firmly with a roller. A vaginal douche of mercuric chlorid, 1 to 2000, was given. The knees were tied together, and a tight binder applied. The gauze dressing was accidentally removed by the patient as she was recovering from the anesthesia, and I dusted over the wound boric acid powder one-quarter of an inch in depth, and covered this with a large piece of surgeon's silk isinglass plaster. This last dressing I greatly prefer, as it has the advantage of not only protecting the wound, but of being more easily kept in place, and also of being semi-transparent.

The operation occupied one hour, but could have been accomplished in one-half the time had the saw been used in the beginning, instead of the bistoury. Thirty-six hours after the operation the patient's temperature rose to 101°, but after thoroughly cleansing the parturient tract, and providing her with a more comfortable bed, her fever disappeared, and the temperature has never since been above 99°. A vaginal injection of mercuric chlorid, 1 to 2000, was given once daily until the lochial discharge ceased. The stitches were removed on the fifth day, when the wound was found to be thoroughly healed.

Nearly two weeks elapsed before involution had taken place sufficiently to allow the womb to return to the contracted pelvis. In twenty-eight days the woman was allowed to get up. She suffered no inconvenience, except the general weakness caused by her long confinement in bed. She is now able to be about the house, and expresses herself as feeling as well as ever.

The child, which weighed eight pounds at birth, is well and healthy.

I had never entertained a friendly feeling toward the operation of symphysiotomy until I read the valuable paper of Professor Barton Cooke Hirst,[1] presented to the Philadelphia County Medical Society in October last. The thanks of the profession are due Professor Hirst for making public his admirable paper.

It seems to me that in this country, symphysiotomy should supplant craniotomy, and in private practice it has the advantage over the Cesarean section of being

[1] MEDICAL NEWS, October 15, 1892, p. 431.

less formidable, and offering the mother an equal, if not a better chance for recovery.

OVARIAN CYST WITH INTERNAL HEMORRHAGE; OPERATION; RECOVERY.

By H. C. MASLAND, M.D.,
of Philadelphia.

The case here reported came under my observation while resident physician at the Wilkes-Barre City Hospital. Because of its complication it seems worthy of mention among reported cases of ovariotomy. I am indebted to Dr. J. A. Murphy for his courtesy in permitting this publication.

Mrs. M., thirty-seven years old, has borne ten children. She states that she has had fever after the birth of four of them. Following the birth of her last child, four months before admission to the hospital, she had chills and fever. Since the birth of the last child she has noticed herself gradually growing larger, without troublesome symptoms, till Friday evening, January 22, 1892, when she was seized with sharp pain in the left side, spreading thence over the abdomen. There was at the same time marked prostration, irritable stomach, chills, fever, extreme thirst. There was a feeling of great distention and a sensation as though something had ruptured.

The woman was admitted to the hospital on the following Monday. On admission she complained of sharp pain in the left side. The breathing was rapid and labored; the pulse frequent and weak; the temperature 101°. There was excessive thirst, but nothing could be retained by the stomach.

On the following day abdominal section was performed by Dr. Murphy. The tumor proved to be, as diagnosticated, a large ovarian cyst. There were numerous slight adhesions to the abdominal wall that were easily broken up. The pedicle was small and was ligated with comparative ease. The operation was performed with the strictest aseptic precautions. No drainage-tube was used.

The ether was administered for an hour and fifteen minutes. Prior to its administration a hypodermatic injection of strychnine was given. Whiskey and digitalis were each injected once during the course of the operation.

At the commencement of the anesthetization the pulse was 146 in the minute, the temperature 102°. Throughout the operation the general condition, if at all changed, was somewhat improved. At the close of the operation the temperature was 101.6°, the pulse 128.

The tumor weighed about thirty pounds. On examination, its inner surface was found covered with a layer of coagulated blood. This hemorrhage into the sac, it was believed, accounted for the acute symptoms of the previous Friday evening.

The patient reacted well and progressed steadily to perfect health. The bowels, inclined to be constipated, moved freely after the administration of salts. Catheterization was also necessary for a few days following the operation.

Union took place by primary intention. The patient was discharged eighteen days after the operation.

This case was especially interesting to those who witnessed the operation because of the internal hemorrhage. Prof. Goodell[1] speaks of hemorrhage within the sac as an occasional accident, with consequent septicemia if not immediately operated upon, operation being the sole chance of life.

In this case the clot was well formed, had undergone contraction and was firmly adherent to the cyst-wall. The serum of the blood was intimately mixed with the ovarian fluid. There was no evidence of any destructive change in progress.

In this case it appeared that had the circumstances been favorable, the clot might have gone on to complete organization.

2027 Allegheny Avenue.

MEDICAL PROGRESS.

Cerebral Anthrax.—Merkel (*Münchener medicin. Wochenschr.*, 1892, No. 47, p. 840) has reported the case of a whitewasher, twenty-two years old, who for three or four days had behaved peculiarly and had vomiting and diarrhea, with pain in the sacral region. The man complained of a feeling of fatigue and of vertigo, and presented a lead-line at the margin of the gums. At the lower part of the posterior aspect of the right chest there was a small area of impaired percussion-resonance, with fine moist râles. The man fainted during the examination, and was evidently quite ill. The temperature was 103.1°. On the following morning the patient became unconscious. In the afternoon he had several epileptiform seizures, and the breathing assumed the Cheyne-Stokes character. In the right eye-ground the margins of the papilla were obscure, and there was a slight staphyloma. The urine was passed involuntarily; a small quantity, obtained by means of the catheter, contained hyaline and granular casts and vesical epithelium. The loss of consciousness persisted, until the man died in the night of the same day. At the post-mortem examination a packet of glands, about as large as a small apple, was found in the posterior mediastinum. The mass was surrounded by a fibrous capsule, and on section was seen to include a number of nodules of various size, each provided with its own capsule. The spleen was considerably enlarged; its capsule shrunken. The stomach was injected and presented numerous small superficial hemorrhages. The intestines were likewise injected, and the solitary follicles were slightly swollen. The dura mater was pale and translucent. The pia was quite injected, easily removable, and somewhat turbid; beneath the pia the sulci in various situations were filled with a gelatinous material; the convolutions were somewhat flattened. The ventricles were slightly dilated and contained a few ounces of clear serous fluid. On section, the cortical tissue appeared pale, though in places containing numerous small red points, apparently hemorrhagic. Sections of the ganglia and of the cerebellum disclosed the presence of similar points, which occupied especially the gray matter. Upon agar inoculated with fluid expressed from the spleen, anthrax-bacilli developed. Similar organisms were found in sections of the hardened brain, spleen,

[1] Lessons in Gynecology, 3d ed., p. 432.

and mass of glands from the mediastinum. In the spleen and mediastinal glands the bacilli were irregularly distributed among the cells, and only in few places in large numbers. In the brain most of the vessels were filled with bacilli. In some places the organisms had escaped from the vessels into the surrounding tissues; in other places they lay in the midst of extravasations of blood. The source of infection could not be determined. It was only known that the patient had in his daily work handled bristle brushes. The thought is suggested that the germs may have entered by the respiratory or gastro-intestinal tract.

Hemorrhagic Goiter in the Course of Pregnancy.—ESTOR and CADILHAC (*Nouv. Montpellier Médical*, 1892, No. 6, p. 758) have reported the case of a woman, thirty years old, in the sixth month of pregnancy, from the beginning of which an enlargement of the neck which had been present for eight or nine years, slowly and progressively increasing in size, had undergone great increase. For nine days there had been constant hemorrhage from two small ulcerated points on the most prominent part of the tumor. The bleeding had at first been rather profuse, but subsequently it became much less, but continuous. The woman had become quite weak, anemic, and cachectic, and complained of vertigo and palpitation of the heart. The sounds of the heart were duplicated, and at the apex a faint blowing murmur could be heard. From the size of the tumor, its irregularity of surface and consistence, the condition and appearance of the patient, and all of the attendant circumstances, it was thought that the condition was one of telangiectatic sarcoma of the thyroid gland, but the subsequent course of the case proved the diagnosis to be incorrect. It was determined to remove the gland. The operation was an extremely bloody one, and the mass was removed only in part. Three days after the operation the woman aborted with a six months' child. The wound united rather tardily, but the patient ultimately made a satisfactory recovery. Ten months after the operation she was perfectly well.

A Complicated Labor.—KOETTNITZ (*Deutsche medicin. Wochenschr.*, 1892, No. 45, p. 1012) has reported the case of a woman, forty-three years old, one of a family of twelve, whose mother had once borne twins, who had herself twice borne twins, and was pregnant for the eleventh time. In the labor one child had been delivered by a midwife, but the further progress of the case was checked by the presentation of two feet, one hand, and a portion of a head, so that the possibility of triplets was considered. All efforts to turn were futile. After the child had died, craniotomy was performed. With some difficulty the second child was extracted. It appeared that the child must have presented by the feet, the lower extremities being extended and the pelvis high up in the uterus. The woman made a good recovery.

The Predisposition to Tuberculosis.—FERMI and SALSANO (*Centralbl. f. Bakteriol. u. Parasitenk.*, xii, 21, p. 750) have made an experimental study to determine the conditions that increase the predisposition to tuberculosis, as well as those that increase the virulence of the tubercle-bacilli. They found that by exposure for several weeks to a temperature of from 91° to 95°, especially if the surrounding air were saturated with moisture; further, by the injection of grape-sugar and lactic acid, guinea-pigs and mice could be rendered susceptible to the tuberculosis of fowls, and mice to the tuberculosis of mammals. The tuberculosis of fowls could be made virulent for guinea-pigs by repeated inoculation of animals rendered susceptible.

THERAPEUTIC NOTES.

Salol Subcutaneously in the Treatment of Pulmonary Tuberculosis.—GROSSI (*Rif. Med.*, Oct. 31; *Brit. Med. Journ.*, No. 1665, Epitome p. 87) has reported the employment subcutaneously of salol in eleven cases of pulmonary tuberculosis at various stages. The drug was dissolved in oil of sweet almonds in the proportion of one to three. At first the equivalent of twenty-five grains of salol was injected daily; after a little while the dose was increased by twelve and a half grains every second day until seventy-five grains were being injected in three equal doses. The injections were made in the gluteal region, and caused neither pain nor reaction; when swelling occurred the injections were for a time omitted. Cod-liver oil was employed as an excipient, but was abandoned because it gave rise to local inflammation, which, however, it is thought may have been due to impurity of the oil. In all of the cases but one, in which the disease was far advanced, the treatment was followed by good results; fever and night-sweats ceased, cough was relieved, the number of bacilli in the sputum diminished, the patients gained strength, and the weight increased.

For Chancroids.—CAVAZZANI (*Giorn. Ital. della Malat. Vener. e della Pelle*, fasc. 2; *Monatsh. f. prakt. Derm.*, xv, 11, 1892, p. 586) recommends the following combination as a topical application in the treatment of chancroid:

℞.—Chloral. hydrat. . . . ℥ijss.
Camphoræ rosæ . . . ℥jss.
Glycerin. neutral. . . . ℥jss.—M.

S.—The camphor and the chloral are rubbed up in a mortar to a transparent fluid; then the glycerin is gradually added, and the whole is heated over a water-bath at a temperature of from 122° to 140°. The preparation should be recent. The application is made morning and evening by means of a glass rod, after the ulcer has been cleaned, and a covering of cotton is finally applied.

The Creasote-treatment of Pulmonary Tuberculosis—From the results obtained at the Hospital Moabit, at Berlin, from the employment of creasote in the treatment of pulmonary tuberculosis during a period of almost five years, ALBU (*Berliner klin. Wochenschr.*, 1892, No. 51, p. 1300) arrives at the conclusion that the agent exercises no direct influence upon the tuberculous process in the lungs, although it is admitted that it is a useful remedy in the symptomatic treatment of the disease—probably better than any other. In most cases it acts as a good expectorant; in some cases as a stomachic; as a rule, it appears to exercise a tonic influence. In a series of experimental investigations it was found that no change in the virulence of the sputum manifested itself in persons that were taking creasote in full doses.

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THE DEGENERATION AND REGENERATION OF NERVES.

THE study of the changes that take place in a peripheral nerve, after severance of its connection with the nerve-centers, is one interesting alike to the physiologist, the neurologist, and the surgeon. The literature on the subject is voluminous, that of the experimental work alone dating back over 100 years; and there have always been wide differences of opinion with regard to the explanation of many of the processes, numerous points even yet remaining obscure. That the two ends of a divided nerve can unite was established early in the history of medicine, but with CRUIKSHANK and HAIGHTON, in 1795, began the study of the question of a return of function after union, and the histologic changes upon which such a return might depend.

It would take us too long to review at all carefully the results of the various experimenters. Suffice it to say, that it has been demonstrated that a spinal nerve can, after section, reunite and again become capable of performing its functions; and more, that the peripheral end of one spinal nerve can unite with the central end of another, and function return. It has not yet been proven, however, that a pure motor trunk can unite with a pure sensory trunk, with return of functional activity in the peripheral portion. The ingenious experiments of SCHIFF, REICHERT, PHILIPPEAU, and VULPIAN, on the lingual and hypoglossal, and on the vagus and hypoglossal nerves, seemed at first to be positive; but, as HEIDENHAIN and others have shown, the interpretations that they have given of their results cannot, on closer examination, be regarded as satisfactory.

With reference to the degenerative changes that occur after section there has been much discussion, and the view of WALLER that the peripheral portion of a nerve undergoes complete degeneration has been many times challenged. There is a certain amount of evidence, chiefly clinical it is true, in support of the statement that union may take place *per primam intentionem*, with almost immediate restoration of function; and, indeed, had others been able to confirm the experiments of GLUCK on the sciatic nerve of the fowl, or had he controlled his work by histologic examinations, we should have had to believe in the possibility of primary healing. But the weight of testimony is against this, and if we grant, as do nearly all modern writers, that union does not take place in this way, the views with regard to the regeneration of the nerve may be divided into three groups. According to that of NEUMANN, supported by EICHHORST and MAYER, the old myelin and axis break down completely in the peripheral end, and lie in the old sheath, regeneration being brought about by a differentiation of this broken-down material into a new axis and a new myelin, the new formation taking place discontinuously, but appearing first near the central end, and progressing toward the periphery. The second view is based on the theory that the axis-cylinder persists throughout the peripheral degeneration. WOLBERG believed that connection was established between the axis-cylinders of the central and peripheral ends by the formation in the intervening cicatricial tissue of entirely new fibers from the round or oval cells of the perineurium.

The ideas which have met with general acceptance, however, are those of WALLER and RANVIER, who assert that there is always a destruction of both axis and myelin in the peripheral portion, the new axis being formed by an outgrowth of the axis-cylinder of the central end. LEEGAARD, writing in 1880, maintained that the axis developed anew in the peripheral end, and became connected secondarily with that of the central end. Incidentally, it may be mentioned here that BENECKE and KÖLLIKER

have shown that the nuclei of the sheath play an important part in the development of the new myelin.

The whole subject has been recently taken up anew by HOWELL and HUBER,[1] in this country, who, after a careful review of the literature, describe their physiologic and histologic experiments, and the results obtained. The technique observed was essentially modern, and in many ways both original and ingenious. We are sorry that, on account of lack of space, we shall have to be satisfied with an epitome of their conclusions.

These writers find that, after division, a nerve never unites by first intention, but, as the histologic examination shows, undergoes complete degeneration in its peripheral end, segmentation of the myelin and axis occurring first at the intersegmental lines. After the first four days, there is entire loss of peripheral irritability, the gradual return of irritability and conductivity being delayed until about the twenty-first day. The sensory recover their function earlier, as a rule, than the motor nerves.

Arranging the histologic changes in the order of their sequence, there is, (1) following the segmentation of the myelin and axis, a proliferation and migration of the internodal nuclei; (2) a further disintegration and absorption of myelin and axis, associated with an increase in the amount of protoplasm about the nuclei. This soon results in (3) the formation of a continuous protoplasmic band, which lies in the old sheath; (4) a differentiation of the periphery of this band gives rise to a new sheath, when what is known as an "embryonic fiber" is complete, a structure which, while it contains neither myelin nor axis, is capable, after union with a similar protoplasmic outgrowth from the central end of the nerve, of carrying volitional impulses, though incapable of electrical stimulation. To the early development of such fibers we are probably to look for the explanation of those cases of rapid union after section which the surgeons report. (5) The new myelin next begins to appear in the peripheral end, first in isolated drops in the neighborborhood of the nuclei, and later, by a fusion of the drops; a continuous tube of myelin is thus formed. (6) Everything by this time being in readiness, the outgrowth of the new axis-cylinder from the central end rapidly follows, the superfluous nuclei slowly disappear, and the restitution is soon complete. The illustrations that accompany HOWELL and HUBER'S article make clear the successive alterations in the nerve better than any written description could do.

After such thorough work we can easily pardon the writers for indulging in a certain amount of speculation, especially as they have not allowed this to go further than the results of their researches would seem to warrant. But whether the nutrition of each internode is actually dependent upon the regular functioning of the internodal nucleus, and whether the latter is guided in its rule over metabolism by trophic impulses received from the nerve-centers through the axis-cylinder, are questions the answers to which, however probable the solution now proposed may seem, we must postpone until our knowledge concerning such obscure processes becomes clearer.

[1] Journal of Physiology, 1892, vol. xiii, p. 335.

DIABETIC COMA.

THE subject of diabetic coma has always attracted much attention from both clinicians and physiologic chemists. While, however, much has been done to increase our knowledge of the causation of this particular accident of the diabetic, it cannot be said that the ultimate cause of its appearance has as yet been entirely determined.

The view that acetone is the sole factor in its production has been proven false, this substance being found in the urine of patients other than diabetics, and in that of perfectly normal individuals, while SQUIRE has found it in the blood of patients with neither diabetes nor coma. There is more reason in the view that diacetic acid is the toxic substance, although this also has been found in those without diabetes. MINKOWSKI urges the view that β-oxybutyric acid is the toxic material, and has probably advanced one step nearer to the truth, as the substance named has been found in both the blood and urine of sufferers from diabetes. That one or the other, or both, of the last-named substances have at least much to do with the development of the coma is rendered likely by two circumstances—the similarity between diabetic coma and the symptoms of acid-intoxication experimentally produced in animals, and the results of intra-venous injection of an alkaline solution for the relief of the former. To be sure, the amount of benefit derived from this injection is much less than was at one time anticipated, but, so far as it goes, it proves that at least a lessening of the depth of the coma can in some cases be

caused by artificially increasing the alkalinity of the blood. In favor of the view that β-oxybutyric acid is at least a large factor in its production are the facts that diabetic coma is extremely likely to follow prolonged or excessive muscular exertion, and that β-oxybutyric acid is very closely related to the lactic acid of muscular tissue.

Lepine and Hugounenq in 1887 practised intra venous injection of a solution of sodium bicarbonate in a case suffering from diabetic coma, in whose urine and blood β oxybutyric acid was found in corresponding quantities prior to the injection. After the injection improvement occurred, and, although death ultimately took place, the β-oxybutyric acid was found to have disappeared from the urine.

It would seem, therefore, that acetone plays no important part in the production of diabetic coma; and this conclusion is borne out by the experimental injections of acetone made by Albertoni. The importance of diacetic acid and β-oxybutyric acid is clearly proven by the diminution (although in most cases but temporary) of the coma after the intravenous injection of alkaline solutions. That the acidity dependent upon one or both of these acids does not represent the total toxicity of the blood is shown by the fact that this improvement is, in the vast majority of reported cases, merely temporary. There must, therefore, be still another toxic element acting.

The foregoing statements are well confirmed by the report of a case by Roque, Devic, and Hugounenq, in the *Revue de Médecine* of December 10, 1892. Although extremely interesting from every point of view, the report may be said to be especially valuable for the chemical and experimental work performed with the blood. The patient was admitted to the Hôtel-Dieu in partial coma, and with a history of six days of premonitory symptoms. Sugar was found in the urine. The patient was bled to the extent of 300 grams, and 20 grams of sodium bicarbonate were administered before the occurrence of death—thirteen hours after admission. In this case, as in so many others reported, improvement followed the injection. Neither in the blood nor in the urine could β-oxybutyric acid be found. The alkalinity of the blood withdrawn prior to the injection showed, however, that its alkalinity was but 50 per cent. of the normal. By the addition of sodium bicarbonate to a portion of the blood its alkalinity was increased to the normal amount. Eight cubic centimeters of the unalkalinized blood were injected into a vein of a rabbit and produced death, preceded by convulsions; whereas twenty-three cubic centimeters of the alkalinized portion were injected in a rabbit of similar weight before death occurred. In the latter case, moreover, neither were the respirations so rapid nor the convulsions so severe as in the animal killed by the unchanged blood. In other words, the unalkalinized blood was about three times as toxic as was that to which the sodium bicarbonate had been added. In spite, however, of this diminution in toxicity, the blood was still capable of producing the death of the second animal also. In this case there was, therefore, present in the blood some acid poison, the nature of which was not determined, and the toxicity of which was not entirely neutralized by the addition of the alkali. Until the discovery of the character of this substance, not wholly dependent upon its acidity for its toxic property, our best means of combating this most grave symptom of diabetes consists in the intra-venous injection of alkaline solutions. That in the vast majority of cases disappointment follows its use, and that the improvement seen in some cases is merely temporary, should not debar us from persisting in the employment of such a measure, founded, as it certainly is, upon rational grounds and capable of ameliorating for a time this dangerous symptom against which we have no other more certain means.

EDITORIAL COMMENTS.

Audi Alteram Partem.—We were under the impression that in representing the sentiment of the medical profession as being unqualifiedly opposed to the unrestricted sale of patent medicines (we mean plain, every-day quack preparations, like "Hood's Sarsaparilla," "Jayne's Expectorant," "Winslow's Soothing Syrup," and the like), and to counter-prescribing by druggists ignorant of diagnosis, we voiced the unanimous opinion of physicians. It seems, however, that we were mistaken, and in a spirit of fair play we quote from an address entitled "The Physiology of a Menu," delivered before the Alumni Association of the Philadelphia College of Pharmacy by a prominent physician of Philadelphia (*The P. C. of P. Alumni Report*, January, 1893, p. 81), the following remarks:

"My student-hearers will learn, before long, about some of the questions that arise, such as, for instance, that druggists sell patent medicines, and that

they are criticised for doing some other things, as counter-prescribing, etc. I feel, in regard to these matters, that we, as physicians, had better let well enough alone. It is hardly necessary to enter into a deep discussion about the nostrum traffic, very largely for this reason: that the public demand nostrums and will have them, and it is better that the intelligent pharmacist should sell them than that the public should have to resort to the corner grocery, or a place of that kind. . . . I think that we have, as physicians, enough to do to take care of ourselves. It is our duty to cultivate such an elevated standard in our profession that we will not have to resort to nostrum-prescribing. It is necessary for you to do all you can to elevate and to raise the standard of the pharmaceutical profession; such an ideal standard as I have in the past had the pleasure of coming in contact with in my daily work. On our part we should attempt to do the same. I am sure that is the way with most men in the medical profession, and it will continue so."

The argument is forcible, and deserves extended application.

There is "a public demand"—*e. g.*—for houses of prostitution; therefore it would be much better for church-members to keep them than to allow the ignorant and the vicious to do so. Each man has enough to do to keep his own conduct clean without bothering about that of his neighbor.

Then, again, there is quite a large section of "the public" that "demands and will have" bogus medical diplomas. Evidently it would be much better to supply such parchments at respectable colleges than for "customers to have to resort" to vile institutions like that of Buchanan and his friends. How stupid it is, then, in the Medical Society of the State of Pennsylvania to try to have a law passed that will prevent the "intelligent professor" from meeting the demand. If we elevate the standard of our own colleges we need not bother about that of other States or of other sects.

What a fuss all these would-be reformers do make about trifles anyhow! It is much pleasanter and much more popular to leave ill enough alone. One makes fewer enemies, too.

The Conditions of Higher Medical Education.—We heartily commend the excellent words of our contemporary, the *Journal of the American Medical Association*, in reference to endowments, etc., quoted in another column. The wretched condition of medical education in our country has long enough been the subject of ridicule of other countries and of the best men among ourselves. It is a shame that the whole profession in the United States should set itself rigorously and vigorously to stop. State Boards of Examination are right, and should be established everywhere, but they are not sufficient. These can only properly raise their standards as the applicants for admission have been better prepared by the colleges.

About the following propositions it would appear there can be no possibility of discussion or doubt:

1. The minimum of study requisite for granting the degree of M.D. to students possessing no literary or scientific training, upon entering upon their medical studies, should either be four years, or three years of lengthened terms, with real and not sham entrance-examinations, and with a teaching and drilling in actual medical and clinical work that is adequate, and is not simply commercialism masquerading as medicine. Three years—such years as are usually passed—have become certainly and plainly insufficient.

2. No institution can adequately fit its students for their work without endowment or State aid. As a rule, the colleges possessing endowment will certainly prepare their students better than those without the necessary laboratories, the large corps of paid assistants, the enlarged teaching body, the drill of bedside instruction, etc.

3. The fixation of salaries of the teaching body is an absolute pre-requisite to elevation of standards, and a prevention of the graduation of the ill-fitted. It is also a pre-requisite for obtaining endowment, as neither individuals nor the community should endow or aid an institution whose profits and success are primarily for the benefit of individuals, and only secondarily and adventitiously of medical education and of the profession.

Model Dwellings for the Poor.—As a counterweight against the love of quackery by the gentlemen of "the cloth," one is occasionally delighted to find a member of the ministerial or priestly profession who shows an intelligent interest in sanitation and preventive medicine. Such interest is evident in a late lecture by Rabbi Joseph Krauskopf, of Philadelphia, on "Model Dwellings for the Poor." The practical, financial, and hygienic aspects of the question are kept well in view and dominate the entire treatment of the question. It is said that Philadelphia "has done more toward furnishing model dwellings to her poor than any other city."

"With a population considerably smaller than that of New York, we have more than three times the number of houses that the metropolis has, and they are for the most part the properties of their occupants, and while New York averages twenty persons to a dwelling, and Brooklyn ten, and Boston eight, our city averages but five persons to a house; and while the death-rate of New York is 25 per 1000 of its population, and that of Boston 24, and that of Brooklyn 22, we in Philadelphia are fortunate enough to be able to report but 19."

Not content with this showing it is proposed to

go much further, and to organize a "Model Dwelling Company," for erecting a building "that shall yield physical and moral health to a mass of depraved and suffering humanity." Aid is asked, and should be promptly given.

A Fifty-days' Fast.—The newspapers tell of the end of the exhibition-fast of Jacques, in New York. One wonders no longer at the stories that have been told by Chinese travellers, that a man could be hired to die for another for a good dinner. This phenomenal faster is said to have eaten nothing for fifty days, during which time he lost 32¼ pounds, having started in weighing 144½ pounds. During the last two days his sufferings are reported to have been very great, but whether these were real or simulated for theatrical effect, does not surely appear. The ever-present manufacturer of some "peptonized" material furnished Jacques at the end of his fast, some of his "food-product" (duly reported), and now furnishes the world with marked copies of the newspaper report, and with circulars of information in reference thereto. Jacques is also said to have gained during his fast one and one-fourth inches in height. Of course, he used pinches of a powder, for the secret of which the Russian Government offered $50,000. Famine, as is well known, is endemic in Russia.

The Ravages of Diphtheria.—According to the records of the Registration Department of the Philadelphia Bureau of Health, there were in 1892 5051 cases of diphtheria reported by physicians, of which 1484 were fatal. It is in the presence of such facts that the illogicality of popular feeling becomes startlingly manifest. One murder arouses more widespread interest than the thousands of deaths (many or most of which are preventable) silently taking place all over the world. The people who work themselves into a frenzy of enthusiasm over a selfish quack who makes millions of dollars by secrecy in treating a few old cases of often-merited "disease," have no thanks for the profession that unselfishly toils to prevent or cure the deaths of myriads of the innocent and the young.

The Profession and Public Scandal.—The New York *Herald* has at last stopped its daily columns of medical gossip as regards useless and hazardous surgical operations, in which so many members of the profession have aided it in its pernicious scandal-mongering. The result of it all is that the paper has filled its columns in a dull season, the enterprising doctor has gotten much free advertising, and the undiscriminating public has still more exaggeratedly erroneous and absurd suspicions and opinions upon matters about which it is incompetent to judge. The self-advertiser always plays into the hand of his half-brother the quack.

Expensive Economy.—An attempt is again being made to cripple the splendid work of the Surgeon-General's Office at Washington by a proposed omission or reduction in the usual appropriation for printing the catatogue of the library, and for the purchase of books. Every physician is either directly or indirectly interested in seeing that this is not done, and the members of the American medical profession should individually, or as societies, take action to prevent it. As reported to the House, the appropriation omits altogether the item for printing the catalogue (amounting only to $12,000), and reduces from $10,000 to $6000, the customary allowance for the purchase of books. Such economy, in the long run, is absurdly expensive.

Scheming and Frankness.—The medical politician who takes roundabout, secret, and snaky methods of "getting there," confesses two self-stultifying facts: First that his objects are not good and honest enough to be openly avowed; and second, that his strength and self-confidence are not sufficient to attempt the effectualization of his aims, except by chicane and subtlety. All the world recognizes what the politician thinks he is so expertly concealing from all the world, that is, that he is both unscrupulous and weak.

SELECTION.

ENDOWED COLLEGES AND HIGHER MEDICAL EDUCATION.

On the part of the colleges which propose to cater to students seeking short terms of instruction, the apology is made that however much they desire to keep step, forward and upward in the march, they cannot financially afford to meet the advance requirements.

Such institutions are in an unenviable dilemma, for they cannot stand still or paddle along in the old beaten paths. They are destined to either fall back into an innocuous desuetude, or are obliged by the new conditions to gird themselves anew for the exigencies that are before them.

The new conditions imply a provision of the necessary means for creating modern laboratories with accompanying apparatus and accessories of all kinds. Such needed adjuncts, including a trained corps of teachers, are to be obtained only through munificent endowments provided and bestowed by those who are bountifully blessed with this world's goods, or by State aid.

Endowments or State aid should only be given to medical schools having a practical relation with a university or academic college, as one of the post-graduate departments of such institutions. A nominal affiliation is not a sufficient condition. The one must be an integral part of the other. Such a relation naturally fosters and encourages a suitable preliminary course of study for those who propose entering the medical department, the curriculum of which should be, *de facto*, one of the post-graduate courses.

Teachers of the science of medicine in university medical departments should be paid regular salaries, the same as teachers in other departments, and open prizes offered for results of original research.

Teachers of the art of medicine need not necessarily be salaried men, as other emoluments naturally flow to the occupants of such chairs.

Large endowments have recently been made to the medical department of the University of Pennsylvania, the medical department of the University of California, the medical department of the Columbia University, the medical department of Johns Hopkins University, the medical department of the Western Reserve University (at Cleveland), to the medical department of the Chicago University, the medical department of the Northwestern University, the medical department of Dartmouth, and perhaps others; material, if not munificent State aid, is annually given by the Legislature of Michigan to the medical department of the State University; the same may be said of the Legislature of Minnesota, and, perhaps, of other States.

Such are the measures necessary for the promotion of the higher grades of medical instruction, and without such substantial foundations, medical colleges, the managers of which are conscious of their shortcomings, must make a change of front, squarely meet the issue that is before them, and show by their works an honest acceptance of the educational situation.

To the best of our knowledge neither State aid nor financial endowments have ever in any instance been bestowed upon commercial medical colleges, nor is it likely that we shall be called upon to make mention of such an institution. Moneyed men are usually too shrewd to give of their wealth for such individual aggrandizements.—*Journ. Amer. Med. Association.*

REVIEWS.

Diseases of the Eye, Ear, Throat, and Nose. By Frank E. Miller, M.D., James P. McEvoy, M.D., and John E. Weeks, M.D. Students' Quiz Series. Philadelphia: Lea Brothers & Co.

We doubt the advisability, even in a "quiz-compend," of attempting to compress an ophthalmologic epitome into one hundred and ten pages. The authors have succeeded as well as was possible. In view of the too prevalent custom of slip-shod refraction work, we are delighted to find the ophthalmometer of Javal and Schiötz spoken of as "an aid, in a limited sense, for the determination of refraction." It is therefore evident that it cannot be used as the sole instrument in cataract-extraction and medical science! "The trial-lenses must be depended on," etc. We can forgive anything after that, even though not a word is said about eye-strain, what it is and what it signifies, and not a word as to the symptoms of hyperopia and astigmatism—facts that make up about nine-tenths of an oculist's routine concern and work; and our pardon is especially full and free because of the wonderful New York words, "It is always well to employ a mydriatic."

Skiascopy is persistently spelled *skioscopy*.

As there are only sixty-four pages of this little work devoted to diseases of the throat and nose, it would be impossible to deal at length with the many subjects involved. Despite this fact, the subjects have been presented clearly and concisely. One commendable feature of the book is that of the various plates presented many are original, instead of being copied from text-books on the subject, which is usually the case.

The differential table of the signs and symptoms of the principal laryngeal diseases is an admirable one for both student and practitioner. One serious defect in the book is the failure to mention the forms of pharyngeal and laryngeal affections dependent upon lesions of internal organs, also those cases of pharyngitis that occur in patients of a highly nervous temperament—in other words, of reflex origin. We think these subjects too important to have been entirely omitted.

Fissure of the Anus and Fistula-in-Ano. By Lewis H. Adler, Jr., M.D. 12mo, pp. 78. Detroit Geo. S. Davis, 1892.

In this little *brochure* the author has endeavored to give a concise yet thorough account of the two affections—fissure of the anus and fistula-in-ano—in respect to their etiology, symptomatology, diagnosis, and treatment, and not to write upon rectal fistulæ in general.

To neglect, carelessness, want of cleanliness, a false sense of modesty, and the use of improper paper for toilet purposes are attributed the causation and aggravation of many of the rectal troubles encountered by the specialist.

The author insists that the diagnosis of these troubles, to be complete and satisfactory, must in every case be based upon an ocular and thorough digital examination.

The work throughout is modern and satisfactory, and it is to be hoped that in the attractive form in which it is issued it may enjoy a wide circulation and excite a deeper professional interest in rectal troubles than exists at this time.

Die Lehre von den Naseneiterungen, mit besonderer Rücksicht auf die Erkrankungen des Sieb- und Keilbeins und deren chirurgische Behandlung. Mit 5 Abbildungen. Von Dr. Ludwig Grünwald. Pp. 165. Munich. (On the Suppurative Processes in the Nasal Passages, with special reference to the Diseases of the Ethmoid and Sphenoid Bones and their Surgical Treatment.)

This pamphlet of Dr. Grünwald is a learned and elaborate monograph dealing with the diseases of the nose and associated chambers in which a purulent discharge is a conspicuous symptom. We cannot but believe that such a method of classification of nasal diseases is eminently artificial; nevertheless the author has brought together in a convenient form the acute and chronic suppurative processes in the regions named, and has treated the subject in a thorough and practical manner. Themes such as anosmia, parosmia, reflex headache, psychical phenomena, and atrophic changes are embraced in the main proposition. The surgical methods accepted agree with those in general use in this country. A full list of references to the literature of the subject completes this valuable essay.

CONTRIBUTIONS OF PHYSICIANS TO ENGLISH AND AMERICAN LITERATURE. By ROBERT C. KENNER, M.D. Pp. 93. Detroit: George S. Davis, 1892.

As far as it goes, this little volume is highly interesting, giving us brief notices and selections from the writings of Mark Akenside, John Arbuthnot, John Armstrong, Sir Richard Blackmore, Sir Thomas Brown, Walter Charleton, George Crabbe, James Currie, Erasmus Darwin, John W. Draper, Sir Samuel Garth, Oliver Goldsmith, Oliver Wendell Holmes, John Keats, Charles J. Lever, John Locke, D. M. Moir, T. G. Smollett, Henry Vaughan, and John Wolcott. When we lay it down we are tempted to ask for additional volumes, when we call to mind so many equally worthy, of whom our profession would be glad to know more as to their early struggles, their earlier writings, and what they did in our profession. We advise every physician to read this brochure, if for nothing more than the selections from our own Holmes, particularly "Rip van Winkle, M.D."

A HANDBOOK OF THE DISEASES OF THE EYE, AND THEIR TREATMENT. By HENRY R. SWANZY, A.M., M.B., F.R.C.S.I. Fourth edition. Philadelphia: P. Blakiston, Son & Co., 1892.

CONCERNING the fourth edition of this well-known and excellent work, the author says:

"The book has now again been revised throughout and brought up to date. In an appendix, Holmgren's method for testing the color-sense has been described in greater detail than before. Some new illustrations have been added. The great difficulty of an author in the preparation of a book like this consists in 'saying not all he might, but all he ought.' It is his duty to give a succinct and practical account of his subject in its most modern aspect, without weighting his pages with excessive detail and prolonged discussion. This has been my aim. For deeper and wider information, larger handbooks and original monographs must be consulted."

TRANSACTIONS OF THE TEXAS STATE MEDICAL ASSOCIATION, 1892. Pp. 310.

OF this class of medical literature this is a worthy volume. The work of the society being grouped in sections, the papers are considered and published in that order, enabling each to attend to the reading only of those which are in the line of his own work. Space does not permit of an extended notice of the papers, but all are well worth a careful perusal. We commend the manner of arranging the volume, giving at a glance, the officers, next place and time of meeting, etc. These points are often only found after a tedious hunt through the entire work, and cause unnecessary trouble to those who are interested in such data. We would, however, urge that in the next volume the Secretary publish the names and addresses of the officers of the auxiliary societies, or at least of their secretaries.

A MANUAL OF CLINICAL OPHTHALMOLOGY. By HOWARD F. HANSELL, M.D., and JAMES H. BELL, M.D. With 120 illustrations. Philadelphia: P. Blakiston, Son & Co., 1892.

THERE are very few things to blame, and many to praise, in this excellent little compendium. Within the self-imposed limits it may be recommended as one of the best of the smaller manuals upon ophthalmology. We cannot help wishing that a fuller treatment had been given to many subjects. Perhaps a somewhat frequent arbitrariness and apparent dogmatism would have been avoided if the authors had given themselves more room. To say or to imply, *e. g.*, that cocaine always "destroys the corneal epithelium and clouds its transparency," is decidedly an over-statement. Occasional grammatical sins also occur, as for instance: *The external recti-abduction, overcome in the average 8°.* Do the authors pronounce *fibre* or *fiber?* And if they pronounce the word as Americans do, why do they spell it as Frenchmen do? We imagine the authors may now wish they had omitted that relic of medievalism, the dedication!

NEWS ITEMS.

The International Congress of Charities, Correction, and Philanthropy, June 12–18, 1893.—One of the series of international congresses to be held in Chicago in 1893 is to be devoted to the subjects of Charities, Correction, and Philanthropy, and the Fourth Section of this is to consider all matters relating to the Hospital Care of the Sick, the Training of Nurses, Dispensary Work, and First Aid to the Injured. The Committee of Organization of the Congress has appointed Dr. John S. Billings, Surgeon U. S. Army, as Chairman of this Section, and Dr. Henry M. Hurd, Superintendent of the Johns Hopkins Hospital in Baltimore, as its Secretary, and has authorized and requested them to complete its organization, to extend invitations, and to prepare a program for its work. Miss Isabel A. Hampton, Superintendent of the Training School for Nurses of the Johns Hopkins Hospital, has been appointed Chairman of that part of the work of the Section which relates to the training of nurses.

This Section will hold five sectional meetings of about two hours each, commencing June 12, 1893, and will also have charge of one of the general sessions of the Congress, viz., that held on the morning of June 14th.

It is desired that this shall be a truly international gathering for conference on the subjects allotted to this Section, and all who are interested in Hospitals, in the Training of Nurses, in Dispensaries, or in First Aid to the Injured, are cordially invited to be present, to contribute papers and to take part in the discussions.

The papers and proceedings will probably be printed as a separate volume, and it is hoped that this will represent the best methods and the best work in each of these departments in all parts of the world.

The following are suggested as subjects for special consideration in papers to be prepared:

1. Hospital Organization—Governing Bodies—Relations of the Medical Staff and of Nurses' Training Schools.

2. Hospital Finances—Means of Support—Mode of Keeping Accounts—Cost.

3. Plan and Construction of Recently Built General Hospitals, embodying the Latest Improvements.

4. Relations of Hospitals to Increase of Knowledge, to Medical Education, and to the Medical Profession. Hospital Records, Statistics, and Reports.

5. Pay Patients in Hospitals.

6. Isolating Wards and Hospitals for Contagious Diseases.

7. Hospital Diets, Dietaries, Kitchens, etc.

8. Hospital Amphitheaters and Operating-rooms.

9. Hospital Laundries and Disinfecting Establishments.

10. Army and Navy Hospitals—Emergency Hospitals in Time of Epidemics—Temporary and Movable Hospitals.

11. Small and Special Hospitals, Cottage Hospitals, School Hospitals, Private Hospitals, Sanatoriums, etc. Convalescent Hospitals, and What to Do with Incurables.

12. History and Present Condition of Hospitals in the Large Cities.

13. Training Schools for Nurses.[1]

14. Dispensaries—Relations to the Public and to the Medical Profession. Dispensary Records.

15. First Aid to the Injured. Associations for the best means of popular instruction in First Aid to the Injured, and its Place in General Education.

Persons desiring to present papers, or to share in the discussions of this Section, are requested to communicate with the Secretary at once. The period of time allotted for the preparation of the program is necessarily brief and it is essential that all who are willing to assist in this work should act promptly.

The American Surgical Association will hold its next annual meeting at Buffalo, N. Y., May 30, 31, and June 1, 1893.

The following is a list of the subjects which have been selected for special consideration, with the names of the Fellows who have promised to prepare the opening papers upon the several subjects, and of those who are expected to open and take part in the discussions:

The President's Address.

"The Modern Treatment of Compound Fractures," by Nicholas Senn, M.D. Discussion by Drs. Roswell Park and F. S. Dennis.

"Hypertrophies and Degenerations of Cicatrices and Cicatricial Tissue," by J. Collins Warren, M.D. Discussion by Drs. C. H. Mastin, G. R. Fowler, and W. H. Carmalt.

"Surgery of the Gall-bladder," by M. H. Richardson, M.D. Discussion by Drs. J. Ewing Mears, A. Vander Veer, William H. Carmalt, and Theodore A McGraw.

"Surgery of the Rectum," by A. G. Gerster, M.D. Discussion by Drs. L. S. Pilcher, H. H. Mudd, and L. McLane Tiffany.

"Surgical Treatment of Cervical, Thoracic, and Abdominal Aneurism," by C. B. Nancrede, M.D.

"Surgery of the Prostate," by J. William White, M.D. Discussion by Drs. Hunter McGuire, Theodore F. Prewitt, R. F. Weir, and F. H. Gerrish.

"Treatment of Carbuncle," by F. Lange, M.D. Discussion by Drs. Robert Abbe, John B. Roberts, and J. S. Wight.

"Unreduced Dislocations of the Astragalus," by Stephen Smith, M.D., of New York.

The Section on Diseases of the Mind and Nervous System of the Pan-American Medical Congress announces that strong efforts are being made to insure the scientific and social success of the meetings. Papers are expected from distinguished neurologists and psychiatrists. A cordial invitation is extended to all physicians to attend the meetings and participate in the proceedings. Dr. A. B. Richardson, of Columbia, Ohio, is the English-speaking secretary, and Dr. R. M. G. Echeverria, the Spanish-speaking secretary.

[1] In accordance with the general program of the Section, nurses will take part in the general session and in two sectional meetings, and will hold in addition three separate meetings—June 13th, 14th, and 17th.

For these three separate meetings papers on subjects of special interest to Nurses will be prepared and discussed. The following are suggested as subjects to select from:

Training Schools in England and America.
Proper Organization of Training Schools.
Nursing in Infirmaries and Almshouses.
Nursing of the Insane. Obstetric Nursing.
Nursing of Infectious Diseases.
Nursing in Sanatoriums and Home Hospitals.
Private Nursing. Nursing by Religious Orders.
Work of Graduate Nurses.

All communications relating to this portion of the work of the Section should be addressed to Miss Isabel A. Hampton, Chairman, the Johns Hopkins Hospital, Baltimore, Md.

BOOKS AND PAMPHLETS RECEIVED.

Delivery through the Abdominal Walls *vs.* Craniotomy, in Otherwise Impossible Births. By George I. McKelway, M.D. Reprint, 1892.

An Obscure Case of Appendicitis Masked and Complicated by Ovarian Adhesions; Operation and Recovery. By George I. McKelway, M.D. Reprint, 1892.

The Use of Menthol through the Stomach-tube. By A. L. Benedict, A.M., M.D. Reprint, 1892.

The Laboratories of the College of Physicians and Surgeons of Chicago. Circular.

The Relative Safety of Ether and Chloroform. By W. Roger Williams, F.R.C.S. Eng. Reprint, 1892.

Discussion of Dr. Vaughan's Paper. By Bayard Holmes, B.S., M.D. Reprint, 1892.

A Case of Metastatic Abscess of the Brain; Operation; Death. By G. L. Walton, M.D. Reprint, 1892.

Du Traitement des Suppurations Rebelles du Sinus Maxillaire. Par le Docteur A. Cartaz. Reprint, 1892.

The Modern Antipyretics; their Action in Health and Disease. By Isaac Ott, M.D. Brochure. Second edition. Easton, Pa.: E. D. Vogel, 1892.

On Peripheral Neuritis. A Treatise. By James Ross, M.D., LL.D, and Judson S. Bury, M.D. London: Charles Griffin & Co., Limited, 1893.

Conclusions Regarding the Use of Drainage-tubes and Ligatures, and the Possibilities of Skin-disinfection based upon Bacteriological Investigations. By Hunter Robb, M.D. Reprint, 1892.

Transactions of the Medical Society of the State of North Carolina. Thirty-ninth Annual Session, held at Wilmington, N. C., May, 1892. Wilmington, N. C.: Jackson & Bell, 1892.

Observations on Cholera and Quarantine. A National Quarantine Implies National Seclusion. By C. W. Chancellor, M.D. Pamphlet. Baltimore: John Murphy & Co.

Transactions of the American Gynecological Society. Vol. XVII, for the year 1892. Philadelphia: Wm. J. Dornan, 1892.

Prospectus of the London Post-Graduate Course. Fourth Year. Spring Term, 1893.

Ueber die hypodermatischen Injektionen von Blutserum bei der Behandlung der Lungentuberkulose. Von Mariano Semmola. Reprint. Wien, 1891.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

SHOULD WE TREAT FEVER?[1]

BY S. T. ARMSTRONG, M.D., PH.D.,
VISITING PHYSICIAN TO THE HARLEM HOSPITAL, NEW YORK.

IT is almost unnecessary to offer any excuse for presenting for consideration so familiar a topic as is fever, because, as frequently as it is encountered in the routine of our daily work, it is nevertheless surrounded by some of the most abstruse problems in medicine, when we consider its etiology and treatment. More than six hundred different names are given under the caption FEVER in Foster's *Encyclopedic Medical Dictionary;* and although many of these may be appellations for the same disease, still their number affords an idea of the multifarious phases in which fever is encountered.

Pathologists and clinicians have not yet agreed regarding the cause of the manifestation of fever in the animal organism. The late Austin Flint, in an address delivered before the Ninth International Medical Congress (THE MEDICAL NEWS, September 10, 1887), said that "an essential fever is an excessive production of heat in the body, induced by a special morbific agent or agents, and due to excessive oxidation, with destruction of the tissues of the body, and either a suppression or a considerable diminution in the production of water." He intentionally ignored the causative influence of the nervous system.

W. H. Welch showed in his Cartwright Lectures (THE MEDICAL NEWS, April 7, *et seq.*, 1888) that the most frequent cause of fever was some substance that exerted a pyrogenic effect when introduced into the circulation, so that it could act in some way upon the nervous system. Welch considered that if it was assured that these substances incited directly in the blood and tissues chemical changes that led to an increased production of heat, it was even then necessary to have recourse to some action that was exercised upon the nervous system, in order to satisfactorily explain the phenomena of fever.

Samuel (*Real Encyclopädie der gesammten Heilkunde*, art. "Fieber") defines fever as an elevation of temperature that is evoked in consequence of a lesion of the heat-centers. Donald Macalister, in his work on the nature of fever, expressed the opinion that physiologic and pathologic experiments had shown that pyrexia depended on impairment of the inhibitory force by which the heat-producing process is kept within normal physiologic grounds—that is, impaired thermotaxis; upon an increased activity of the process by which the heat is naturally formed, that is, exalted thermogenesis; and upon a more or less complete failure of the process by which heat is discharged—that is, a failure of thermolysis. If we accept this latter explanation, and each year's discoveries add force to the reasons now existing for such acceptance, the infection of the blood by any organic product is simply the means of reaching the nervous centers, thereby producing the phenomena of fever. It must be stated that this theory is not universally accepted, Professor Arnaldo Cantani believing (*Transactions of the Tenth International Medical Congress*, vol. i, p. 152) that fever is an acute alteration of organic metabolism, with increase of tissue-combustion, thus agreeing with Flint, though overlooking Welch's warning that even with this theory it was necessary, in the last analysis, to have recourse to the action of the heat-centers.

Most clinicians accept fever as the principal index of the course of an infective process in the animal organism; and the question must be decided, in each case of fever, whether the infection is autogenetic or heterogenetic. We know that certain poisons, such as strychnine, veratrine, nicotine, and picrotoxin, will produce fever when given in certain doses. In certain digestive disturbances the peptones formed during digestion may gain access to the general circulation, and produce an autogenetic infection-fever, analogous to the ferment-fever that Hildebrandt has produced in dogs by the subcutaneous injection of pepsin. Vaughan and Novy have called attention (*Ptomaïnes ana Leukomaïnes*, Philadelphia, 1891) to this intra-organic formation of poisons, and they emphasize the importance of the subject by saying that "a man may drink only chemically pure water, eat only that food which is free from all adulterations, and breathe nothing but the purest air, free from all organic matter, both living and dead, and yet that man's excretions would contain poisons." They consider that it is unimportant whether the proteid molecule is broken up by organized ferments (bacteria), by unorganized fer-

[1] Read before the New York State Medical Association, November 17, 1892.

ments (the digestive juices), or by those unknown agencies that induce metabolic changes in the tissues, for in all cases poisons, differing in quality and quantity according to the proteid that is acted upon, will be formed. These poisons produce the autogenous fevers known as fatigue, exhaustion, thermic, non-eliminative, nervous, and hysterical.

Whatever cause may produce the fever, there is always an increased temperature that physiologists have shown is due not merely to a diminution of the loss of heat, but chiefly to an increased production of heat, as calorimetric observations have proved. Increased heat-production alone would be insufficient to raise the temperature of the body if there was a compensating increase of loss of heat; but this compensation is wanting in fever, and it has been designated the most characteristic feature of the febrile condition. Besides the ataxia of the thermal centers there are increased metabolism, as is evidenced by the augmented excretion of carbon dioxid, of urea, and the other urinary products; greater frequency in the number of the heart-beats, and in the respiration; diminution of the digestive activity and intestinal movements; and general disturbances of the organic functions.

From this *résumé* of the febrile phenomena it may be deduced that pyrexia, as seen by the physician, is the expression of certain pathologic processes that interfere with the physical and mental welfare of the person affected, and that consequently demand treatment.

When those interested in the history of medicine read the works that served to guide and instruct our predecessors of the first half of this century, and learn therefrom the then prevalent practice of starving the fever-patient, they will entertain a high regard for Dr. Graves, whose teaching assisted in securing the abandonment of this practice, and who said the only epitaph he desired was: "He fed fevers." And while there may be unanimity of opinion regarding this point, the physician is confronted in this *fin de siècle* by another problem that cannot but be an absorbing one, for there are those that urge, though they may not seek epitaphic renown, that there should be no treatment for fever *per se*. Are we to throw, so to speak, our antipyretics to the dogs? Is fever a beneficial organic reaction to the metabolic and hemic changes produced by the causative agent of the disease? Osler, in his recent work on the *Practice of Medicine*, says: "Fever alone is not hurtful, but it is difficult to differentiate the effects of fever and of the poisons circulating in the blood. It is not impossible, as some suppose, that the fever may be directly beneficial; still, high and prolonged pyrexia is undoubtedly dangerous and should be combated." And Lyman, in his more recent work on the *Practice of Medicine*, says: "The elevation of temperature that marks the course of fever is not an unmixed evil, yet it is customary to attempt its reduction." Each of these authors seems to have accepted the fever-process as explicable by the seemingly fantastic German theory of the day that fever is in the nature of a reparative process. In just what way it is reparative we are not informed; and it is as impossible to say with our present knowledge, in exactly what way fever accomplishes any useful purpose, as it was when Welch published his classic study on the subject of fever.

The conclusion formulated by Austin Flint in the address heretofore referred to, that "the abstraction of heat by external cold, and the reduction of temperature by antipyretics administered internally, without affecting the special cause of the fever, improve the symptoms which are secondary to the pyrexia," expresses the practice and belief of most physicians.

Reference has been made to the influence of certain alkaloidal poisons in increasing the temperature, presumably in consequence of their effect upon the heat-centers. But recently, Dr. E. Maurel has published (*Bulletin de Thérapeutique*, 1892, cxxii, p. 259) a series of experimental researches on the action of these alkaloids on leukocytes, and he finds that the toxic action of the alkaloids on the animal economy is in the ratio of their destructive action to the leukocytes. For example, five centigrams of strychnine will immediately kill all the leukocytes in one hundred grams of human blood, while two centigrams of that drug will effect the same result in the same quantity of blood in several hours. Five centigrams of atropine would also instantly kill the leukocytes in one hundred grams of human blood; although in the blood of the hare, an animal that eats belladonna with impunity, the alkaloid was almost without effect upon the leukocytes in the strength of two grams of atropine to one hundred grams of blood. Pilocarpine kills the leukocytes in human blood in a dose of ten centigrams to one hundred grams of blood. These experiments forcibly demonstrate the important relation existing between the leukocytes and the functions of the organism, and give force to Metschnikoff's theory of the relation between phagocytosis and immunity from disease. If these drugs that may produce fever are toxic to the leukocyte, should our treatment of fever have in view the preservation of the leukocyte under the best conditions, because in fever we have poisoning by animal rather than vegetable alkaloids?

The experiments that were made with the product of the tubercle-bacillus are not so old that we have forgotten the fever that soon followed the hypodermatic injection of a small quantity of tuberculin.

The injection of the products of the cholera-spirillum is also followed by fever, a result that is subsequent to the hypodermatic injection of the products of several of the infectious microörganisms. Such a fever, though usually enduring only a few hours, may be sustained by repeated injections of the toxin-product employed. It is therefore apparent that the microörganism causes fever by the production of its leukomaïn or toxin, rather than by the presence of the organism itself in the body.

It is possible to adduce further evidence of the influence of the increased toxicity of the blood in producing disturbances of the thermal centers, just as an analogous autogenetic increase of the toxicity of the blood-serum causes disturbances of the convulsive centers. The recently published experiments of Bouchard have shown that during puerperal convulsions the urine is diminished in quantity, and that it is less toxic than usual, so that effete products that should be excreted are retained in the animal organism. Dr. Chambrelent has proved (*Lancet*, September 24, 1892) the latter statement to be a fact, by supplementing Bouchard's experiments with the urine by those he made with blood-serum that he also obtained from women suffering with puerperal eclampsia. Chambrelent's results showed that the poisonous properties of the serum were constantly related to the gravity of the case, so that increased autogenetic infection augmented the severity of the convulsions.

The high temperature of fever cannot exercise a fatal influence on the specific microörganisms with which we are acquainted, because they develop most favorably at temperatures of from 35° to 40° centigrade, so that the usual febrile temperatures are best suited to their growth. This would seem as if fever was more useful to the microörganism than to the animal organism. Robert Koch regards temperature as the most important factor in the process of attenuation of the microörganisms, the temperature effect being aided perhaps by certain products of tissue-change in the bacilli. That these latter products are the more important in producing this attenuation is shown by the existence of the cholera-spirillum, the typhoid-bacillus, and other specific microörganisms in the tissues of persons affected by the respective infectious diseases after all febrile phenomena have ceased.

The brothers Klemperer have shown that in animals inoculated with the pneumonia-coccus, temperatures varying from 40° to 41° centigrade were reduced to normal in twenty-four hours after the injection of serum from another animal that possessed immunity to pneumonia. They believed that the pneumonia-coccus generated in the animal organism a product that they called pneumotoxin, that produced elevation of temperature; the pneumotoxin in its conflict with the leukocytes generated an anti-pneumotoxin that neutralized both the pneumotoxin and the pneumonia-coccus. They injected the blood-serum of persons convalescent from pneumonia into six pneumonic patients, and in from six to twelve hours subsequently there was a decided fall of temperature that remained normal in two of these patients.

Metschnikoff, Golgi (*Phagocytisme dans le Paludisme*), Gamaleia (*Annal. de l'Institut. Pasteur*, 1888, p. 229), and Laveran (*Traité des Fièvres palustres*) agree that febrile heat acts like artificial heat in increasing the activity of the leukocytes so that the parasitic elements become more easily their prey than in an individual in whom the temperature is normal. Metschnikoff (*Annal. de l'Institut. Pasteur*, 1887, p. 329) states that in relapsing fever the febrile access lasts during the free life of the spirilla in the blood, and ceases when these parasites become the prey of the leukocytes.

Here again we see the disposition to make the fever a reparative process; and yet clinical and experimental facts do not wholly warrant the deduction. In the experiments of the Klemperers already cited, the fever was insufficient to increase the leukocytic activity to a degree that disposed of the pneumonia-coccus and prevented the formation of additional pneumotoxin. It had been proved that the latter by itself caused fever; therefore it is a justifiable inference that the persistence of fever for from six to twelve hours after the injection of the serum from the pneumonic convalescents was due to the pneumotoxin present in the blood at the time the injection was made; and the subsequent decline in temperature was caused by the destruction of the pneumonia-cocci by the serum and consequent cessation in the formation of pneumotoxin.

In paludal poisoning the fever persists or recurs as long as the specific hematozoa are present in the blood. Quinine has no special influence in inciting leukocytic activity, at least as a principle applicable in all diseases. Yet the administration of quinine, by destroying the specific organism of paludal disease, ends the fever that never plays the rôle of a reparative process therein.

Opposed to this deduction are the experiments of Alexander (*Bresl. ärzt. Zeitschr.*, 1884, Nov. 11), that showed that the number of spirilli in relapsing fever increased when the temperature of the affected person was lowered by antipyrin. Wagner (*Ann. de l'Institut. Pasteur*, 1890, p. 571) showed, as Pasteur had shown before him, that fowls exposed to cold became capable of acquiring charbon; he considered that this occurred in them because the leukocytes lost a portion of their activity, and he was able to produce the same effect by lowering the temperature of the fowls by antipyrin.

Professor A. Rovighi, in the report (*Le Mercredi médical*, Aug. 3, 1892) of the results of his experiments made to determine the influence of artificial elevation and depression of temperature upon the course of infective processes, stated that he inoculated rabbits with human saliva, which was poisonous for these animals; he placed some of them, together with uninoculated rabbits, in a thermostat in which the temperature oscillated between 36° and 40° C. Other inoculated rabbits were kept in ordinary cages, while still others were placed in cold chambers and in cold baths, in which their temperature did not exceed 40° C. Death occurred earlier in the latter animals than in those in the thermostat; in fact, these latter died more slowly than those in the ordinary cages. But if the temperature of the rabbits in the thermostat exceeded 43°, death occurred quickly. Elevation of temperature occurred much more rapidly in the infected than in the uninfected animals in the thermostat. The loss of weight was much greater in the animals exposed to a lower than in those exposed to a higher temperature. At the point of inoculation in the latter there was an abundant fibrinous exudate containing a large number of leukocytes, while in the refrigerated animals the exudate was sero-purulent and less rich in leukocytes. The blood of the animals in the thermostat was much more toxic than that of those refrigerated, evidencing an increased formation of toxins in the former; though cultivations succeeded better if made from the blood of the refrigerated animals, because it more frequently contained the living microörganism.

Rovighi also inoculated rabbits with mouse septicemia; and those to which he subsequently gave acetanilid rapidly succumbed to a considerable decrease of temperature, while those infected in the same way that were placed in a thermostat presented no other morbid phenomena than an induration at the point of inoculation. He also found that rabbits and guinea-pigs inoculated with charbon survived longer if kept at a high than if kept at a low temperature, the charbon-bacillus appearing in the blood of the former later than in that of the latter.

Walter has published (*Archiv für Hygiene*, 1891, Bd. xii. p. 329) the results of experiments upon the artificial elevation of the temperature of the body on the course of infection with the pneumonia-coccus, in which he found that high temperature prevented the passage of the organism into the blood.

While it appears to follow from these experiments that an elevation of temperature to a certain degree exercises a favorable influence upon the infected animal, and that a lowering of temperature increases the intensity of the infective processes, it must be remembered that these are extraneous influences, while fever is an intrinsic influence. The observations of Röhrig and Kuntz, Colosanti and Kukler, Theodor and others have shown that gaseous exchange, and particularly tissue-oxidation in febrile animals, are much more intense in those exposed to cold than in those kept in thermostats. Yet these results are at variance with clinical facts, for it cannot be denied that the best results in treating typhoid fever have been obtained by the use of cold baths that keep the temperature below 40° C.; and if these increase the intensity of the febrile process and of tissue-oxidation, we are led to believe that the patients of those that use them recover in spite of, rather than on account of, the treatment that is only useful in increasing the elimination of toxic products.

The researches of Penro have shown that karyokinesis and the regeneration of tissue are affected much more rapidly at a temperature of from 34° to 38° than at a temperature of from 7° to 12° C.; but it has not been shown that karyokinesis and tissue-regeneration are affected at a temperature of from 38° to 40° C., as well as at the lower temperatures that antipyretic treatment endeavors to secure, and never does that treatment seek to reduce the temperature below 37.2° C., at which, experiment has shown, these processes are most effectively performed.

If the statements that "fever alone is not hurtful," or that "fever is not an unmixed evil," are based on the production of artificial fever in animals by inoculation, it is necessary to remember that in the latter such a fever only reaches a temperature of from 1° to 4° F. above the normal temperature of the animal; and if based on the fever produced by prolonged confinement in thermostats kept at high temperatures, the animal's temperature in such instances was only 4° to 5° above normal. Such rises of temperature are not regarded with any alarm when they occur in man; but while we may not look upon them as intrinsically hurtful or evil, they certainly cannot be regarded as beneficial or good. A fair analogy to the treatment of moderate rises of temperature is that of the treatment of pain. Each condition is indicative of irritation of certain portions of the nervous system; and though it has been maintained that pain is beneficial, it is the popular plan to relieve it at once whenever it appears, subsequently attending to the disturbing factor of which the pain was the index. So, I believe, we should deal with fever; relieve it by suitable antipyretics whenever it appears, and then give those remedies that will eliminate the exciting cause.

In this review of the question whether it is desirable to relieve pyrexia by the administration of antipyretics, the following points have been held in view:

1. That fever is the expression of some disturbance of the thermal centers.

2. That while this disturbance may be traumatic, it is usually the result of the existence in the organism of certain autogenetic or heterogenetic (infectious) products that have the same affinity for the thermal centers that certain vegetable alkaloids have for certain cerebral centers.

3. That fever does not exercise any beneficial effect in limiting an infectious process; this is a fact that has been known clinically for years by the occurrence of cases of infectious disease that pursued their usual course without any rise of temperature.

4. That it is the general experience of clinicians that the relief of fever exercises a beneficial influence on the general condition of the patient, though the apyrexia does not indicate that the cause of the pyrexia has been removed.

5. That in many febrile conditions the causative principle has produced a thermotaxic paresis that is at once relieved by some suitable antipyretic.

6. That in continuing the employment of antipyretics we are not losing sight of the possibility of obtaining, either synthetically or derivatively, compounds that will, when administered in the specific diseases, have the same inhibiting influence on the further development of the microörganisms of those diseases that certain alexins, toxalbumins, or toxins have. The action of such compounds should be as specific in each infectious disease as is the action of quinine in paludal fevers.

ECLAMPSIA GRAVIDARUM ET PARTURIENTIUM.

BY J. LINDSAY PORTEOUS, M.D., F.R.C.S. ED.,
OF YONKERS, N. Y.

THE word "Eclampsia" is said by some authorities to be derived from ἐκ and λάμπω, I shine—because, in some forms of convulsions, flashes of light appear before the eyes, but the derivation that seems to us the best to describe the disease is ἐκ and λαμβάνω, I seize hold of, as in every form of this malady the patient clutches at something, real or imaginary.

Anyone who has had experience in obstetrics must have noticed that there are several varieties of this dreaded disease. Some, to those conversant with such cases, give little alarm; but unless the physician can promptly diagnosticate one form from another, much mental worry is occasioned both to himself and the friends of his patients. The object of this paper is to give some hints, the outcome of years of practice, to those of less experience.

There are at least five varieties, viz.: (1) hysteric, (2) epileptic, (3) uremic, (4) apoplectic, (5) microbic.

1. The first form (HYSTERIC) need give little cause for alarm. It is, as a rule, confined to the period of gestation, but may continue throughout the period, at intervals, until labor sets in. When, however, the throes of labor begin and there is something of a realistic nature to occupy the mind, it vanishes. As the symptoms of hysteria are so well known to every physician, we will only take a cursory glance at them. Beginning with a tightness about the throat and the "globus hystericus," the attack is attended with sobbing and frequent attempts to swallow. Then the patient may become still or roll about. The hands clutch something or are carried to the breast or some other part of the body. The face is sometimes pale, though not always. There is no froth issuing from the mouth, no tongue-biting, no falling in a dangerous place. A very prominent feature is the quivering of the eyelids. The fit terminates, after a longer or shorter period, with a scream and the shedding of tears, and a quantity of limpid urine is often involuntarily discharged. As a rule, this form of eclampsia causes no interference with gestation, although premature labor is said to have been caused by it. The treatment, being so well known, need not be gone into at the present time.

2. EPILEPTIC.—For the sake of a more correct and sytematic diagnosis, we will adopt the Brown-Séquard method of dividing the symptoms into three distinct heads: (A) the premonitory, (B) the paroxysmal, (C) the inter-paroxysmal.

A. The *premonitory* are in many cases well marked; although the classic or Galenic aura is not often a prominent premonitory feature of this form, there are many others almost always present. To economize space, we will summarize the more important symptoms: A vague, indescribable sensation is *sometimes* complained of. Irascibility of temper; a vascular contraction in feet and hands, producing a falling in temperature; a spasmodic state of some muscle, or an optical illusion or hallucination, are almost always present, singly or collectively. Numerous other symptoms which have been noticed by different observers we need not refer to.

B. The *paroxysmal.* In this stage the symptoms vary according to whether the attack is one of epilepsia mitior (*petit mal*) or epilepsia gravior (*haut mal*). In the former there may only be the unconscious state, with a fixed condition of the muscles of the eye or contraction of one or more muscles of the face, or a movement of the lips, tongue, and throat as in the act of swallowing; or, according to D. Russell Reynolds, the patient may be only unconscious, *i. e.*, have simple loss of perception and volition. In such case the duration of unconsciousness is so short (from one to four seconds) that the casual and inexperienced observer does not notice it. Epi-

lepsia gravior, on the other hand, presents a very complex state of affairs. There is contraction of the bloodvessels of the brain and face, with consequent face-pallor, loss of consciousness, congestion at the base of the brain and of the spinal cord, tonic contraction of the laryngeal, cervical, and some of the respiratory muscles (laryngismus and trachelismus), the peculiar cry, and falling backward or forward. There is also tonic contraction of the muscles of the limbs. The difficult breathing prevents the entrance of the blood into the chest and its issue from the cranio-spinal cavity. Asphyxia, contraction of bowels, bladder and womb, are present, with coma, fatigue, headache, and sleep. The urine has often been observed to contain albumin, although there was no evidence of renal disease.

c. *Inter-paroxysmal.* The general health of epileptics is usually poor. They are excitable. Their memory is bad and they are subject to fits of depression. Their digestion and circulation are often affected. These do not take a form which is peculiar to this disease; neither does their morbid condition of mind have any peculiarity, nor are they necessary concomitants of epilepsy. The frequency of attacks varies greatly—some may have them daily for years, others may have a period of many years between the attacks. The more violent the convulsion the less seldom the attack.

Prognosis. Inherited epilepsy is seldom cured. Brown-Séquard says positively that some cases may be cured. A chance of cure is greater when some curable or amendable organic alteration exists as the cause, than if such were not the case.

If the cause can be traced to syphilitic brain-disease, the chances of cure are most favorable. If tumor of the brain be the cause, modern cerebral sugery may often be employed with certain success. There seems to be no necessary complication, but chronic nephritis, disease of the womb or other viscus may favor these convulsions. In the pregnant woman, death of the fetus or premature expulsion is to be dreaded more than the immediate danger to the mother. We do not consider that the mother runs more risk from this form of convulsion *because* she is pregnant.

Treatment. Our chief object in treating this disease in the pregnant or parturient woman should be to curtail the duration, frequency, and severity of the attack, in order that she should go safely through her full term of pregnancy and have sufficient strength for the final efforts of parturition. The means we adopt to accomplish this end may, for the sake of covenience, be divided into three heads: (1) What to do at the outset of a paroxysm; (2) What to do during a paroxysm; (3) What to do between the paroxysms.

In case of the existence of a real aura, several means for the prevention of the development may be employed. Galen advised a treatment which is often successful, but the reason he gave has by Brown-Séquard been proved to be entirely wrong. The Galenic reason was that, by tying a ligature round a limb, it barred something from going to the brain. On the other hand, Brown-Séquard has proved that the preventive effect was caused "by sending an irritation toward or rather to the nervous centers." We have tried this with much success. The best way is not to apply the ligature and leave it, but to apply and to remove it repeatedly. It is not necessary, according to the same authority, to apply it to the limb when the aura is felt. If a premonitory symptom is disturbance of respiration, the administration of chloroform may give instant and sometimes permanent relief. Immersion of the hands in warm water, giving stimulants, applying ice to the nape of the neck, may each or all be applied successfully. If we can find a part of the body which, by irritation, gives rise to an attack, we should apply counter-irritants to that part. If this part be the central organ of the nervous system, the spinal marrow, which is acted upon by an excited condition of those nerves passing from the uterine organ to the spinal center, depending upon the puerperal state or upon actual labor, counter-irritants will be of little service. While these stimuli continue to influence the spinal marrow, epileptic convulsions may be caused in either of two ways: those acting permanently on the spinal marrow, or centric causes, and those affecting the extremities of its incidental nerves, which are causes of excentric or peripheral origin. According to Tyler Smith, those acting immediately on the central organ are: (1) Pressure on the medulla oblongata by congestion-coagula, nervous effusion within the cranium; (2) Loss of blood; (3) Morbid elements in the blood, the influence of emotion.

Of causes acting on the extremities of the excitor nerves we have: (1) Irritation of the incident spinal nerves of the uterus and uterine passages; (2) Irritation of the excitor nerves within the cranium; (3) Irritation of the incident spinal nerves of the rectum; (4) Irritation of the ovarian nerves; (5) Irritation of the gastric and intestinal branches of the pneumogastric nerves; (6) Irritation of the incidental spinal nerves of the bladder; (7) As probable causes may be enumerated: irritation of the cutaneous nerves of the mammæ and hepatic and renal branches of the pneumogastric. Of course, the centric and excentric causes may act together. Over many of the conditions named we have no control. At all times, however, we should attend to the condition of the alimentary canal and kidneys.

Treatment during the paroxysm. Lay the patient in the supine position; loosen the clothes. Use only

sufficient force to prevent the patient from injuring herself. Careful administration of chloroform is often useful when a status convulsivus occurs. If, however, the attacks are so frequent that they threaten death by exhaustion, or a miscarriage is imminent, or the period of gestation is within two months or even longer of completion, the most rational and best treatment in our experience is to hasten on labor and deliver as quickly as possible. The safest mode of performing this is by digital dilatation, which may be accomplished in from one hour and a quarter to two hours. This is simple enough, with an assistant, to dilate by turns.

In the inter-paroxysmal stage, if the convulsions are not of a serious nature, we must search for a cause and treat it.

There may be albumin in the urine, but not necessarily so, as we maintain that with this form of eclampsia the kidneys have little to do. About 9 per cent. of pregnant women have albumin in the urine some time during gestation, but convulsions do not occur in 9 per cent. of pregnant women.

3. UREMIC CONVULSIONS.—Whatever may be the primary cause of this form of convulsion, whether mechanical or chemical, most authorities agree that it is a strike on the part of the eliminative organs. The symptoms may in many points resemble those of epilepsy.

In some cases there may be no loss of consciousness, but in all cases there is an abundance of an albuminous body in the urine, and a great diminution in quantity, sometimes total suppression. The attacks may resemble tetanus. There may only be one, coming on without warning or preceded by headache, giddiness, and drowsiness, or numerous convulsions may take place in rapid succession. Death has occurred during the attack, but not frequently during the puerperal state (if there is no true renal disease), because their origin in this state is a combination of circumstances which does not long persist, as either nature or art comes to the rescue. As there is no structural change in the kidney, there is no serum-albumin.

Treatment. Reëstablish as quickly as possible the action of the eliminative organs. Apply poultices over the loins; use the hot pack; give hydragogue cathartics and digitalis; perform venesection up to 8 or 10 ounces; give diaphoretics, as pilocarpine, etc. If all this treatment is of no avail, we must consider the advisability of bringing on labor as in the previous case.

4. APOPLECTIC CONVULSIONS.—Although this form, strictly speaking, should not be put under the head of eclampsia, it does sometimes happen that a patient is so seized during gestation or parturition, and we ought to be prepared to diagnosticate the condition when present. It may be defined as loss of consciousness, of sensation, and of voluntary motion, coming on more or less suddenly, and due to a morbid state of the brain (Gowers).

Symptoms. The onset is often sudden. The face is generally, but not always, flushed. The heart and arteries beat more forcibly than normal, but less frequently. Respiration is labored and stertorous. In profound coma, pupils are dilated, and sluggish in their reaction to light. The sphincters become relaxed. There is often paralysis of one side. The temperature is at first always lowered, but rises in from twelve to twenty-four hours.

The condition may be mistaken for syncope due to cardiac inaction, but we trust that the mistake is not frequently made. In cardiac syncope the heart's action fails, the pulse is weak and almost imperceptible, the face is pale, respiration is sighing and irregular, and the sphincters are rarely relaxed. Albumin is often present in the urine in cases of cerebral hemorrhage. If the patient is young, and there is general edema, the case is more likely one of uremia than apoplexy. The coma is more profound in cerebral mischief than in uremia, although the patient may be roused in many cases. Convulsions may come on at the onset, but they are generally unilateral. In uremic poisoning there are *general convulsions* at the onset. Coma in apoplexy comes on suddenly; in uremia, slowly.

Treatment. Remove all constrictions around the neck. Apply sinapisms to the back of the neck and to the extremities. Carefully administer stimulants when embolism or thrombosis is suspected. Strong purgatives, such as croton oil, lessen the serum in the blood, and remove it from the brain. Apply cold to the head. Little else can be done; much interference may cause baneful results.

5. MICROBIC CONVULSIONS.—We are not aware that any notice of this form of convulsion has been given in text-books, and we are aware that not until the 25th of March of this year, had a microbe been discovered. On that day two French physicians announced that they had found the microbe of puerperal eclampsia. The symptoms can be best given by describing a recent typical case observed by the writer.

On a Tuesday in the month of April last, we called on a lady who expected to be confined the following month. She looked the picture of health; was cheerful and hopeful; had *no drowsiness* or feeling of fatigue. She was walking about her house, and, in fact, felt perfectly well. She had no anasarca, and both kidney, and bowels were performing their functions thoroughly. The urine contained no albumin; it had specific gravity of 1022, and was slightly acid. At 1 A.M., Wednesday, we were notified that the membranes had ruptured without pain. At 7 A.M. we visited her and found that she had slight labor-pains, which continued at long intervals till noon, when suddenly, without warning, she had a

convulsion which lasted about ten minutes. The twitching was only slight; there was no quivering of the eyelids, no frothing at the mouth, no pressing of the thumb on the palm. The face was at first pale, then gradually became of a purplish hue. The pupils were normal in size, but did not respond to light. The pulse rose to 98. The woman recovered consciousness almost at once, and vomited. There was a slight feeling of exhaustion, but nothing else to indicate her late condition. At 1 P.M. there was another very slight convulsion. Dreading more, we determined to hurry on labor and deliver. With the aid of D. E. Hermance, we anesthetized her deeply, and by persistent digital dilatation delivered her with forceps in one hour and twenty minutes of a dead child. When the effects of the anesthetic had passed away she felt comparatively comfortable. This condition remained till 7.30 P.M., when she had in rapid succession three slight convulsions. During the night she voided quite a quantity of urine, and slept well. All Thursday her condition seemed quite favorable. At night she had, on the suggestion of a physician, a small hypodermatic of morphine. At 7 A.M., Friday, we were told that she could not be awakened. The nurse had noticed during the night her twitching frequently. We immediately tried to restore consciousness, which, to the extent of an attempt to speak, we did. Steaming her, hypodermatics of pilocarpine, enemata, were tried without effect. A pint of urine was removed by catheter and found perfectly free from albumin. After numerous slight convulsions she died at about 4 P. M.

We noticed no symptoms which might be said to be peculiar to this form, but there was the absence of the prominent symptoms in the previous four forms of eclampsia. There were no premonitory symptoms whatever which might give us a clew to the cause. The treatment pursued, we maintain, was quite justifiable. Until we know of a positive destroyer of this puerperal microbe, we can only try to drive it out of the system by exciting all the eliminative organs to do their utmost, and thus lessen their power of destruction, and at the same time get the patient out of the parturient condition as soon as possible.

The question may arise, Is there a microbe present in all pregnant women, which some are able to throw off and others are not, which in some increase so much as to endanger life?

We firmly believe that this form of eclampsia, with our present knowledge of treatment, is *always* fatal; that the *four* previously mentioned are seldom fatal if the treatment we have suggested is faithfully carried out.

For Impetigo Contagiosa.—

℞.—Cocainæ hydrochlorat. . . gr. v.
Salol. . . . . gr. lxxij.
Ætheris . . . . . ♏ lxxij.
Collodion. . . . . ℥j.—M.
S.—Apply topically.

L'Union Méd., No. 148.

STUDY OF A CASE OF ERYSIPELAS GENITALIUM, DUE TO THE USE OF INFECTED OINTMENT.[1]

BY ADELAIDE WARD PECKHAM, M.D.,
OF PHILADELPHIA.

M. D., born October 7, 1892, was a plump, healthy babe, with fair, sound skin. The navel healed quickly. The mother seemed free from disease, convalesced without rise of temperature, and there was a history of preceding normal pregnancies.

On November 12th, five weeks from the date of birth, I saw the child after an illness of twenty-four hours. The mother said that for a slight "chafing" of the genitalia she had applied an ointment that she had in the house, and that during the following day and night the child had become alarmingly ill.

On inquiry, the mother stated that the ointment had been used by a woman in the family on a suppurating gland in the neck, application having been made by dipping the fingers in the ointment. This woman gave a history of having fallen through a hatchway, striking the side of the neck upon a projection in the wall; a large abscess had formed, which suppurated very freely, leaving a long and angry-looking cicatrix.

On examining the child, the following conditions were found: Temperature, 103.8° F.; pulse full and very rapid, all food vomited, bowels constipated, extremities cold, convulsive twitchings of the muscles of the face and limbs, fingers and toes flexed, the pupils contracted. The child was in a state of coma. Locally there was a small excoriation on the left labium, intense redness and swelling of the skin over the pubic region, which was sharply defined, and did not extend to the anus. On November 13th, the second day, the erythema had extended to the anus and creases of the thighs; the labia were so infiltrated that the skin seemed tense enough to rupture; the temperature was 103.4° F. On November 14th, the inflammation had extended over the lower third of the abdomen and lower half of the back, making a shining, inflamed surface so sensitive that the child had a slight spasm when moved; temperature still 103.4° F. On November 15th, there was no extension of inflammation upward, but it had reached the left knee and halfway down the thigh on the right side, the parts being swollen to nearly twice the normal size; the skin over the genitalia was slightly paling; temperature, 103° F. On November 17th, both legs were very much swollen, and of a dusky-red color. The convulsive movements and insomnia, which had lessened, returned again; the tongue was coated; there was intense thirst and slight diarrhea. The temperature was now 102.4° F. On November 22d, the right foot was swollen, the inflammation on the right side reaching a point two days later than on the left; the cuticle was flaking on the parts first attacked, and on the labia it came off in casts; temperature, 99°. On November 25th, the left foot was nearly normal, and the right improving; temperature, 99° F. On November 29th, there was

[1] From the Laboratory of Hygiene, University of Pennsylvania.

noticed a swelling on the top of the left foot, and another on the inner malleolus of the right ankle showed beginning abscess-formation: there was also edema of the left labium. The temperature was normal. On December 2d, there was slight cough, the first symptom of the broncho-pneumonia that followed. Both abscesses were lanced. On December 8th, the respirations increased in frequency, and an area of dulness was found by percussion on the right side posteriorly; large and small mucus râles were heard over both lungs; there were frequent spells of coughing, with cyanosis around the mouth and nose, relieved by vomiting. On December 13th, another large abscess on the right ankle and a small one on the top of the left foot were lanced. A swelling, the size of a walnut, was found in the anterior axillary line between the fifth and sixth ribs. On December 14th, the rattling respiration and severe cough still continued. The skin over the abscess on the chest began to redden, and the temperature was 100° F. Two small abscesses were lanced, one on each foot. On December 18th, an abscess on the chest was lanced; the lungs were much clearer.

The left leg was red and swollen to the knee on December 21st. The temperature was 100° F. The redness of the leg had disappeared on December 23d, and a swelling involving two lymphatic glands was found in the left groin; these two glands coalesced into a single abscess-cavity. On December 24th, an abscess in the groin was lanced, and two ounces of pus were discharged. On December 26th, an abscess was forming under the right knee, and two enlarged glands were found in the left axilla. On December 27th, the abscess under the knee was lanced; temperature, 99.2° F. On December 30th, the incision made under the knee had become occluded by the dressing; temperature 106° F., but it fell to 101.2° F. in three hours after drainage was reëstablished. A gland in the left groin was much enlarged. On December 31st, the temperature was 100.1° F. A small abscess on the left ankle was lanced. On January 18th, two abscesses in the left axilla and one in the right groin were lanced.

During the whole period of abscess-formation the temperature seemed remarkably low. The test was made at different hours and on each day, and at no time did the temperature exceed 99° F., with the exception mentioned in the history.

Treatment.—During the first forty-eight hours hot fomentations were applied to the inflamed parts. Calomel, $\frac{1}{12}$ gr., with 2 grains of sodium bicarbonate was given every hour until the bowels moved. An ointment containing one dram each of ichthyol and zinc oxid to an ounce of cosmolin was used during the remainder of the attack of erysipelas. During the pyemia, brandy and syrup of iron chlorid were given in suitable doses, and elixir of calisaya whenever there was rise of temperature.

BACTERIOLOGIC STUDY OF THE CASE.

The following experiments were made with the blood, pus, and sputum taken from the child, and with the ointment used during the first twenty-four hours of its illness. The latter was that variety of petroleum ointment named "Lucilline."

EXPERIMENT I.—On November 16th, from the advancing margin of the disease on the leg two drops of blood were drawn by puncture with a sterilized needle, the skin having previously been thoroughly washed in a solution of carbolic acid of approximately 2 per cent. strength. From the drops of blood six slanting tubes of nutrient glycerin agar-agar were inoculated by smearing the blood upon the surface of the culture-medium with a sterilized platinum-wire needle. These tubes were placed in the incubator for twenty-four hours; they then showed a growth of isolated colonies differing in size and color, a pin-point pearly growth being very plentiful. From the different colonies on these tubes a series of Petri plates, four in number, was made, and from single colonies on these plates tubes were inoculated, and pure cultures obtained. By their growth on different media, and by microscopic examination of cover-slip preparations, these proved to be the streptococcus erysipelatis, the staphyloccus pyogenes aureus, and a nondescript bacillus

EXPERIMENT II.—Inoculations were made from the ointment by smearing fifteen tubes of glycerin agar-agar with it, using the amount taken up in a looped platinum wire for each tube. Mixed growths were found on twelve tubes after exposure to a temperature of 37° C. for twenty-four hours. Petri plates were made as before, and from single colonies pure cultures of a streptococcus and the bacillus pyogenes fluorescens were obtained.

Macroscopic comparison was then made of the streptococci obtained from these two sources, regarding their growth on different media and their reactions. Two sets of tubes of the different kinds of media were inoculated, the one with the streptococcus from the child, the other with that from the ointment. The inoculations were made in the same hour and kept in the incubator an equal length of time. The streptococci from both sources were found to be identical in every respect, and we feel justified in thinking the streptococcus in the ointment to be the streptococcus erysipelatis. It presented the following characteristics:

On Petri plates of ordinary nutrient agar-agar, glycerin agar-agar, and gelatin, pin-point, pearly-white colonies are found, which under a low power of the microscope are round, finely granular, of a yellowish-brown color, with even edges. Smears on agar-agar, glycerin-agar and gelatin, show macroscopically a delicate, pearly growth, with many isolated colonies, growing most luxuriantly on glycerin agar-agar, and least on gelatin. They do not liquefy gelatin. On potato the growth is invisible, but after a short time there is an increase of moisture about the point at which the organisms were deposited. In neutral or slightly alkaline litmus milk it causes a very faint pink color in twenty-four hours; this change in color is not due, apparently, to any production of acid, as the reaction of the milk, even when this color is present, is shown by litmus and curcuma paper to be slightly alkaline,

and remains so for several weeks. In none of a number of experiments bearing on this point was there any coagulation of the milk, or any deviation from the change in the reaction described. In deep stab-cultures (8 cm. deep) there is a growth along the entire track of the needle, as well as upon the surface. This growth is most luxuriant at the temperature of the incubator, 37° C., and also develops, but less rapidly, at ordinary room-temperature. This organism stains readily with the ordinary anilin dyes.

Microscopic examination of fresh cultures, especially in bouillon, show the cocci arranged in long chains. Similar long chains are also to be found in blood-serum cultures; upon other solid media chains are likewise to be found, but they are usually shorter.

EXPERIMENT III.—Experiments upon animals gave the following results:

Two rabbits were inoculated, one intra-venously, the other by scarification on the ear, with pure cultures of the streptococcus of the fifth generation. An area of slight inflammation found at the point of inoculation on the third day soon disappeared, and no further result was obtained. Two rabbits were again inoculated in the same manner with a culture of the first generation. The experiment proved negative.

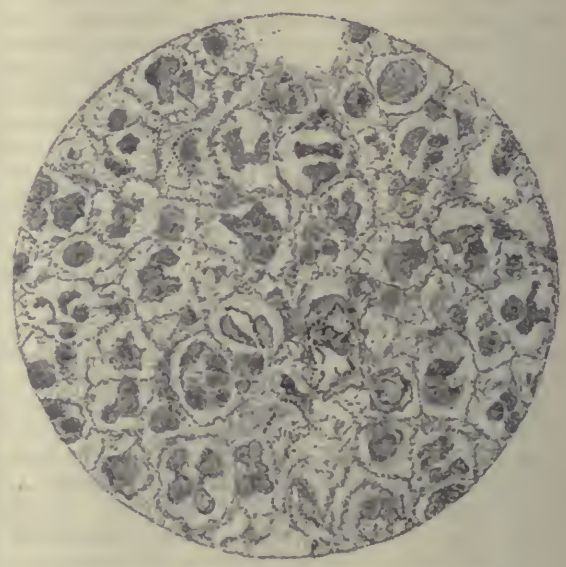
EXPERIMENT IV.—To determine whether the ointment was free from bacteria when procured, the outer portion was removed, and from the deep part ten tubes of glycerin agar-agar were inoculated as before. The tubes were inoculated December 1st, and have remained sterile up to the present time (January 15th).

EXPERIMENT V.—To prove that the bacteria would live in the ointment, test-tubes containing ointment were sterilized for two hours, the ointment allowed to harden in slants, and inoculated with the streptococcus erysipelatis, the staphylococcus pyogenes aureus, and the bacillus pyogenes fluorescens, the cultures used being of the fifth generation from the patient. From these tubes inoculations on glycerin agar-agar were made every third day, and cultures of the organisms introduced obtained for twenty-one days. Cultures of streptococci were obtained from the box of ointment for forty days, and the bacillus pyogenes fluorescens is still easily obtained after sixty days.

EXPERIMENT VI.—In the first stages of the broncho-pneumonia, tubes were inoculated from the sputum. The staphylococcus pyogenes aureus was obtained, but the streptococcus, if present, was not found.

EXPERIMENT VII.—After the twelfth abscess, tubes of glycerin agar-agar were inoculated with blood taken at a point farthest from any abscess; no growths were obtained. Tubes were then inoculated with blood taken from near an enlarged gland, and colonies of the streptococcus appeared in twenty-four hours. Cover-slip preparations of blood from the same point showed a very few diplococci and marked leukocytosis.

The pus from the first abscess was examined microscopically. A stained cover-slip preparation (Löffler's blue) showed streptococci in short and in long entwined chains, and, throughout the specimen, solitary scattered diplococci. Some of the leukocytes contained short and entwined chains of streptococci, as shown in accompanying illustration. The cells were mostly polynuclear leukocytes, some of which showed various stages of nuclear division. A few cells contained small stained granules of a purplish tint. No other bacteria were found by using different stains, and from Petri plates inoculated with pus only pure cultures of streptococci were obtained. The pus from each large abscess was tested in the same manner with the following result: Pure streptococci were obtained in every case, with one exception, in which a skin coccus, the staphylococcus epidermidis albus, was isolated.



SUMMARY.—The points of interest in studying this case are the following:

1. That bacteria were conveyed from one person to another through the intermediation of an ointment.

2. That the streptococcus erysipelatis lived forty days in an ointment.

3. That streptococci taken directly from the point of suppuration lived longer in ointment than those which had passed through several generations on media.

4. A typical case of erysipelas genitalium, having been caused by a streptococcus from a suppurating gland, with no known preceding lesion, tends to confirm the opinion that the streptococcus pyogenes and the streptococcus erysipelatis are identical.

5. Streptococci were found in the blood.

6. The necessity of antisepsis, even in pyemia, is shown by this case. The abscesses were due to streptococci only, and precautions were necessary to prevent mixed infection by the introduction of

the staphylococcus pyogenes aureus found in the skin and sputum.

NOTE.—The condition of the child at the time of writing points to recovery. The fourteenth abscess has just been lanced. Those that have formed within the past two or three weeks have matured slowly, and the child has gained in flesh and strength. The digestion, which has been fairly satisfactory during the entire sickness, is good. Anticipating a fatal issue, promise of autopsy was obtained, and should death finally occur, a protocol of the autopsy will be added to this article.

In conclusion the writer extends thanks to Dr. A. C. Abbott and Dr. A. A. Ghriskey for direction and verification of work.

ORIGINAL ADDRESS.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

The Inaugural Address of the President, delivered at the Eighty-seventh Annual Meeting, February 7, 1893.[1]

BY L. S. PILCHER, M.D.

Members of the Medical Society of the State of New York:

THE people of this Commonwealth, by the act of their representatives in the Legislature of 1806, constituted this Society the legal representative of the medical profession of the State, provided for the organization of the practitioners of the State into county medical societies, and by a later enactment made it the duty of every physician to join the medical society of his county. To these societies were committed important functions pertaining to the licensing of medical practitioners and to the regulation of the practice of physic and surgery, while they affiliated with and were subordinated to the State Medical Society.

With the lapse of years the development of new conditions of society, of education, and of practice, brought from time to time modifications in the duties presumably required of these medical corporations. The function of supervising the qualifications of those who should desire to practise physic and surgery in the State of New York was virtually abrogated by the law of 1844, which threw open the privileges of medical practice to all men who could protect themselves from suits for damages due to malpractice, from ignorance, or immoral conduct in their practice. The Legislature of 1857 gave legal status to practitioners of homeopathic medicine by incorporating them into State and county societies, and likewise in 1865 the eclectic practitioners were given a similar legal status.

In 1874, 1880, and 1887 statutes were enacted by the several Legislatures of those years, regulating and defining the status of the medical practitioners in the State, by which the prerogatives of the State and county medical societies were less prominently acknowledged, and the importance of chartered medical colleges was more clearly recognized. Nevertheless, throughout the whole of this long period of eighty-seven years the State of New York has never ceased to recognize the dignity and importance of the Medical Society which it created in 1806 as the proper representative and exponent of rational medicine within its borders. This Society has ever been unceasing in its efforts for the public welfare, for raising the standard of medical character. By virtue of its representative character, of the loftiness of its aims, and the personal dignity and worth of its members, its influence for good in this Commonwealth has never been measured or restricted by the legal regulations or stipulations that may have bound it at any period of its history. It has, furthermore, continually used its influence to elevate the status of medical education and practice throughout the country at large. During the early years of its history it was active in securing common action among the medical colleges of the United States in improving the character and extent of the teaching in those institutions; later, it inaugurated and carried to a successful issue the movement for organizing an American Medical Association; and in the more recent past, it did not hesitate to declare that with the changing conditions of knowledge, of education, of legislative enactments, and of social conditions, it was desirable that the medical profession should emancipate itself from certain paternal restrictions that it had inherited from the conditions of a previous generation, and to formally take action giving a large liberty of personal judgment upon ethical questions to all who acknowledged its authority. It thus placed itself again in the forefront of a reform the effects of which have spread far beyond the limits of the State within which this Society has any jurisdiction.

In the immediate present, the Commonwealth has again intrusted to this Society the important duty of supervising the qualifications of all who may hereafter desire to practise rational physic or surgery within the State of New York, by the recent law constituting a medical Board of Examiners, whose members shall be nominated by this Society, and to whom, thus representing this Society, and being accountable to it for their work, is committed the prerogative of fixing the standard of educational qualifications to which every future practitioner of rational medicine in this State shall attain before receiving license to practise.

Your President has taken pains during the past year to acquaint himself with the condition of the medical profession throughout the State. The estimated number of practitioners is 10,000; the estimated population is 6,000,000—or one physician to every 600 of population; of these 10,000, about 8000 are practitioners of rational medicine, 1300 of homeopathic medicine, 400 of vegetable medicine, and the remaining 300 represent many kinds of medical theories.

The number of schools devoted to undergraduate instruction in rational medicine is 9: of these, 2 are in the city of Buffalo, 1 in the city of Syracuse, 1 in Albany, 1 in Brooklyn, and 4 in New York City. 2096 students are at the present time under instruction in these schools: 128 in Buffalo, 58 in Syracuse, 170 in Albany, 201 in Brooklyn, and 1539 in New York City.

The number of schools in the State of New York de-

[1] The exigencies of our space do not permit us to publish this able address in full, but we reproduce all that pertains to general or national medical questions.—ED. NEWS.

voted to post-graduate instruction is 2, both in New York City. During the past year the number of matriculants at these two schools has aggregated 819.

The number of students in the medical schools in this State is especially significant from the fact that the entrance into these schools is guarded by a preliminary examination prescribed by the State and conducted, not by the officials of the schools, but by the Board of Regents of the University of the State—an examination which is not a mere form, but is sufficient to insure that intending students of medicine shall already possess a fair general education before beginning their technical studies. It is still more significant from the fact that the diplomas of these schools no longer confer the right to practise medicine in the State of New York, and have value only as the thoroughness and comprehensiveness of the instruction to which they testify are acknowledged by public opinion. The laws of the State now require that all who hereafter enter upon the practice of physic or surgery in this State shall have attended three full courses of lectures, and all the medical schools of the State now require the same amount of attendance upon lectures before the granting of a diploma, while the general influence of these teaching bodies is to encourage their students to extend their periods of lecture-attendance to four years. The influence of the present conditions that attend medical education in this State is very healthful, in that every teaching corporation is directly stimulated to improve its methods and facilities for teaching, that thereby students may be attracted to its halls.

An examination of the curriculum and the published statement of each of the schools of this State, supplemented in some instances by additional statements from the dean, shows that much has been done already, and more is contemplated in the immediate future, toward securing proper gradation of studies, division of students into small sections under tutorial supervision, systematic text-books and laboratory drill, and adequate personal contact of the students with patients in dispensary and hospital classes. The present law of the State with regard to the supply of anatomic material is fairly liberal, and an enlightened public opinion has sustained its practical application whenever it has been brought into question. Laboratories of histology and pathology have been furnished and equipped in connection with all the schools, and in New York and Brooklyn elaborately planned and fully endowed institutions for these departments of instruction exist, in which not only the instruction of students is provided for, but every facility and encouragement for original work is furnished, not only to their staff of instructors, but to any member of the medical profession.

The department of practical obstetrics presents conditions of special difficulty in American communities for organization so as to give the needed amount of practical demonstrative teaching to students. Appreciating this, and thinking that this one department might be taken as a fair index of the average character of the instruction that was being given in the medical schools of the State, I addressed to each of them an inquiry as to the amount of practical experience in midwifery required by each of the students before graduation, stating that I intended to present the information thus obtained to this Society. The following are the answers received:

Medical Department of Niagara University: Each student attends from five to ten cases before graduation.

Medical Department of the University of Buffalo: Each student is required to attend at least two cases.

Medical Department, Syracuse University: At least one case must be attended; usually from two to four are given.

Albany Medical College: Provision is made to enable members of the senior class to attend one or more cases of obstetrics.

Long Island College Hospital: All obstetric cases in this hospital and in Kings County Hospital are used for clinical instruction. Six students in the former and three in the latter attend each labor. The number of labors attended by each student has varied from five to fifteen.

Woman's Medical College of the New York Infirmary: Each student is required to attend ten cases.

Bellevue Hospital Medical College: Each student is recommended to have a two-weeks course at the Midwifery Dispensary, during which he attends at least six cases of labor, but this is not obligatory.

Medical Department, Columbia College: Every student is required to attend the Sloane Maternity for one week, day and night; to examine all cases and to be present at all confinements.

Medical Department, University of the City of New York: Students who desire it may secure attendance in the lying-in service of the Midwifery Dispensary for periods of two weeks or more; this is not obligatory.

From these replies it is evident that much progress is being made in this most important department of medical instruction. It appears, however, that in at least two of the largest schools in this State it is still possible for students to receive the degree of Doctor of Medicine without ever having seen a case of labor. I know that it is the desire of the authorities of these schools that at the earliest practicable moment this reproach should be removed, and I submit that it is a proper thing for the Medical Society of the State of New York to use its influence in promoting this end. For this purpose I would recommend that this Society formally request the Regents of the University of the State to decree that an essential requirement for admission to an examination in obstetrics by the State Board of Medical Examiners shall be that the candidate certify to having attended at least three cases of labor.

Time does not permit me to further analyze the methods of medical education now prevalent in this State. I think, however, that all the facts warrant the statement that positive improvement in every direction is constantly being effected, that it has already attained a breadth and thoroughness and practical value that compel the confidence of an enlightened public, and that wherever deficiencies or occasions for adverse criticism still exist, they will gradually be removed with the lapse of time; they are the faults of youth, the results of the absence of governmental control and endowment, the effects of the spirit of individualism which is at once our pride and our weakness. It will ever remain the duty of this Society to point out the way of improvement and to give form to the public and professional opinion that must precede each advance step.

The State Board of Medical Examiners. The work of this Board may now be considered as fully inaugu-

rated. The time during which any persons desiring to practise medicine in this State were exempt from examination by this Board has now elapsed, and at the present time the only gateway to the legal practice of medicine in this State is examination by this Board. I am not aware that the two years of testing to which this law has been subjected has shown it to possess any objectionable features, while its influence is acknowledged by all to have been beneficent. Up to the first of December last, 90 candidates had been examined by the Board representing this Society, of whom 80 had been accepted; 10 by the Board representing the Homeopathic Medical State Society, of whom 5 were accepted; and 5 by the Board representing the Eclectic State Medical Society, of whom 2 were accepted. When it is remembered that these were all subjected to the same examination, except in the department of therapeutics, it illustrates the direct effect of the bill on the public welfare—since, while it caused the rejection of 11 per cent. of the candidates from the schools of rational medicine, it caused the rejection of 50 per cent. and 60 per cent. of the candidates from schools of sectarian medicine. The inevitable result of the continuance of the work of this Board will be to greatly improve the general standard of medical education in this State. It is certain, also, to excite the antagonism of those whose pretensions are put in so bad a light by its workings. It behooves every intelligent and public-spirited citizen to protest on every proper occasion against any modification of the existing law which shall weaken its force or efficiency in any way. It would be proper for this Society at this time to adopt a resolution expressing satisfaction with the law as it now stands, and requesting that the Legislature decline to permit any modification of its provisions, for the present at least, and instructing its Committee on Legislation to be vigilant in guarding this law against amendment or attack. I accordingly recommend such action to the Society.

The American Medical Association. I have the pleasure of presenting to the Society at this time a communication from Dr. Wm. B. Atkinson, permanent Secretary of the American Medical Association, transmitting a resolution adopted by that Association at its session held in Detroit, June, 1892, appointing a committee of five, instructed to meet a like committee from the State Medical Society of New York, and the State Medical Association of New York, for the purpose of adjusting all questions of eligibility of members of the State Medical Society of New York to membership in that Association, and notifying this Society that the committee in question had been appointed, consisting of Drs. N. S. Davis, of Illinois; John H. Rauch, of Illinois; Wm. T. Briggs, of Tennessee; Dudley S. Reynolds, of Kentucky, and Willis P. King, of Missouri.

The evident intention of this resolution was to request that this Society appoint a similar committee to confer with the committee named, although the resolution as transmitted does not say so. It is difficult to see what purpose such a conference as is proposed could serve. The American Medical Association is very properly its own judge of what shall be the qualifications required of its members. It is a voluntary association, responsible to no one, and may change its standard for admission at its will. At its session in St. Paul, in June, 1882, it voted that the Medical Society of the State of New York was not entitled to representation in it because the Code of Ethics adopted by that Society essentially differed from and was in conflict with the Code of Ethics of the American Medical Association. The status of affairs to-day differs in no respect from what prevailed in 1882, save that a year or two later the American Medical Association adopted an explanatory declaration which practically interpreted its own code to mean the same as the code already adopted by the Medical Society of the State of New York. It did not, however, rescind the vote of disfellowship adopted in 1882, but on the contrary, at the recent meeting in Detroit, renewed it, and extended it to embrace not only this Society as an organization, but also all persons who affiliated with it. At this same meeting, also, it appointed a committee to report upon the revision of its own Code of Ethics. There is, therefore, no certainty as to what the future Code of Ethics of the American Medical Association will be. It would be highly improper for the Medical Society of the State of New York to assume in any way to dictate to, or even suggest to any organization not subordinate to it, what ethical standard, if any, such an organization should adopt. It must content itself with regulating its own standards, as it now does, suggesting in turn that it is equally indelicate for organizations that have no supervising relation to it, to extend advice as to its internal affairs. Practically, the relations of the Medical Society of the State of New York to the American Medical Association are the same as those which it sustains to the British Medical Association, the Canadian and Ontario Medical Associations, and to the medical societies of the various adjacent States to which it is in the habit of sending delegates annually, viz.: the relations of courtesy and comity. All of these medical organizations named continue to receive with due honor and respect the delegates appointed by this Society, and, doubtless, whenever the American Medical Association shall signify its desire that this Society shall again send delegates to its meetings, such delegates will be sent. The Medical Society of the State of New York, however, must meanwhile be content to do its own work in its own way, awaiting the pleasure of the Association in question. Nevertheless, since a failure by this Society to appoint such a committee as is contemplated in the communication from the American Medical Association would doubtless be construed by many, who are still ignorant of the real relations that exist between the two organizations, as displaying a factious and quarrelsome spirit, and as a matter of simple professional comity I would advise that a committee of five be appointed by this Society to meet the committee of the American Medical Association as requested.

The Code of Ethics. In the course of the discussions which have been provoked by the action of the American Medical Association just alluded to, it has come to the knowledge of your President that many of the physicians of this State are convinced that, in view of the present state of general enlightenment prevailing throughout the State of New York, and the safeguards which by legal enactments are thrown about the entrance into the medical profession, it would comport more with the dignity of the medical profession, and would enhance the respect in which it is held by the general public if all

specific rules of ethical conduct were elided from the By-laws of the State Medical Society, and if the regulation of such matters were hereafter left to the judgment of individual practitioners influenced by the well-known consensus of professional opinion and local custom in the places where the work of each is being carried out. Among a large number of representative physicians from all portions of the State with whom I have conferred on this point, I have found a singular unanimity of feeling on this subject. The only hesitancy which any have expressed has been as to whether it would be wise, since practically this is already the present status of the profession in this State, to make any movement looking to a formal elision of a code from our By-laws, lest it should revive acrimonious discussion, and reawaken strife that would be detrimental to the higher interests of the profession in this State. By far the greater weight of the opinions which I have been able to elicit has, however, been that no such result would follow, but that, on the contrary, such action would tend still more to heal old differences and bring together all the elements of the medical profession in this State. Such is also my own mature opinion; and, further, it has seemed to me that at present, when there is a general revival of interest in the matter of professional ethics—as is evidenced by the discussions which are now going on in the medical journals of the country—and when this question of code is again unavoidably brought to the attention of this Society, it is a specially favorable moment for taking this final step. At the present time the only allusion in the By-laws of this Society to a system of medical ethics is the very brief Section 8 of Chapter VI, which merely says:

"The system of medical ethics adopted by this Society, February 7, 1882, shall be considered authoritative to govern the medical profession in the State of New York."

I would recommend that this section be dropped *in toto*. The effect of such action would be to leave this State Society without any formulated Code of Ethics, and to relegate the code of 1882, together with those of 1847 and 1823, to the domain of history, though ever remaining of interest and value to the student of the development of ethical standards in the medical profession of this State.

A National Quarantine. Prominent in the thoughts of both physicians and people at this time are considerations as to safeguards against the invasion of this country by cholera, the danger of which all the lessons of the past warn us is imminent. Action has already been taken by many of the county societies of this State urging upon Congress the enactment of comprehensive laws establishing the national regulation of quarantine. Doubtless at an early period in this meeting this subject will engage the attention of this Society and will receive thorough consideration at your hands.

It is to be hoped that Congress will not be satisfied with hasty legislation intended only to meet a present emergency, but that it will forthwith institute a committee of inquiry that shall thoroughly investigate and consider all matters pertaining to national sanitation, which shall mature a report that shall result in the enactment of permanent and comprehensive laws in this department of the public welfare.

ORIGINAL LECTURE.

RELAPSES OF TYPHOID FEVER.

Part of a Clinical Lecture,
delivered at the Pennsylvania Hospital, January 14, 1893.

BY PROF. J. M. DA COSTA, M.D., LL.D.

[Reported for THE MEDICAL NEWS.]

GENTLEMEN: The next case to be brought before you this morning is one of relapse of typhoid fever. Now, gentlemen, relapses following typhoid fever are in themselves an interesting study. They are of interest, in the first place, because you can never know in a case of typhoid fever when a relapse may happen; there is nothing to distinguish the cases from other cases until after the beginning of the relapse. They are of interest, again, because the relapse gives us symptoms somewhat different from those of the original attack. They are also interesting from the fact that the causes of these relapses are exceedingly difficult to understand, and of great importance to study. Therefore, besides their clinical interest, they possess a pathologic interest which is inexhaustible.

Now, to prove to you the character of this case, before we examine into his condition this morning, I shall briefly indicate the principal points in his clinical history. He is a young man, nineteen years of age, admitted on the 13th of December, suffering with typhoid fever. He stated that previous to his admission he had been ill for about twenty days. I do not know that this is altogether true. By this I mean that he was not in a condition, when admitted, to give a very clear account of his previous history.

What makes me doubt the statement that he had been suffering with typhoid fever for three weeks is the temperature-record that has been kept since his admission. It begins with 104° F. on the afternoon that he was brought here; it remains very high, or in the neighborhood of 104° for three days; it then commences to zigzag, with rather a high evening temperature (103.1°) until we find it down one morning to 99.5°. This low temperature, it is noted, followed free cold sponging, and was only temporary, for it again rose to 102° in the evening. This is the temperature-record of the first week, or a little beyond. In the second week we notice the same continued fever-temperature, which, though still above the normal, does not exceed 102°; and so it goes on into the third week, when, slowly and with considerable variation between higher evening than morning temperatures, it descends to normal. On the 24th of December, he is free from fever. This is the temperature-chart, or fever-record, of the man while under treatment in the hospital; this is what makes me doubt that he had been sick for twenty days before coming here. He has probably included his prodromic symptoms in the time of his actual illness, which probably had only existed for four or five days prior to admission, judging from the subsequent course of the fever.

With regard to the original attack of typhoid, I merely observe that it was not accompanied by anything decidedly out of the way. He had very little intestinal disturbance; if anything, the attack was marked by its

freedom from such disorder, as the bowel-movements were not frequent, not more than two or, at most, three in a day. There were very few spots; very little tympany—in truth, the case was regarded as a mild one; he was never delirious, and slept well at night; there were no marked nervous symptoms.

Now, gentlemen, I have brought this man before you this morning to show what has occurred since the 24th of December, when he had a normal temperature and was convalescent. The temperature was even subnormal during the following week, for the morning observations are from 97° to 98°, with slight evening rise, which is common after typhoid fever. So it goes on until the 8th of January—six days ago—when the morning temperature was 98.6°, and the evening temperature 103°. On the next morning, it goes down only a little over half a degree (102.4°), and then, on the second day of this relapse, his evening temperature is 105.4°. Here is the record which is so significant! Observe the normal, or slightly subnormal, temperature for two weeks, then this marked rise. Now mark the course afterward. The morning after this exacerbation the temperature goes down to 100°, largely as a result, I believe, of a cold bath and repeated sponging with water under the care of our attentive nurses; but it does not stay down; it goes up the next evening to 103°, yet by repeated cold spongings it was reduced again to 100°. After this there is a solitary rise to 103°, but in the main the temperature is kept down by continuing these cold applications, and by another plunge-bath.

Now, you wish to know something about the other symptoms. When the relapse began he had epistaxis of two or three days' duration. His mind was quite as clear as during the original attack, although his temperature was above 105°. He complained, it is true, of some headache, which lasted two days and occurred at the same time as the epistaxis; but there was no delirium, no restlessness, no jerking of the tendons.

Having shown you the temperature-record and having noted the absence of nervous phenomena during the relapse, we turn to the intestinal symptoms. What were the intestinal lesions, as interpreted by the symptoms? He had three or four loose movements during the day, more, you observe, than during the original attack. His tongue has been slightly coated and dry; it is a little cracked at the edges and tip. There have hitherto not been any spots noticed, but I observe one or two rose-spots upon the abdomen to-day, which have appeared since yesterday. In his first attack he did not have many spots, and, in truth, after the first day or two we found no spots. These that we see here have, as stated, just appeared. It is true that a general duskiness of the skin makes this case unfavorable for the detection of the characteristic spots, but careful inspection failed to detect them until this morning.

To complete these notes, I will add that he has also some enlargement of the spleen; the splenic dulness begins a full finger's-breadth below the ribs. He has no albumin in his urine. Upon auscultation we find a very short, almost inaudible first sound and a very sharply defined second sound, but without murmurs.

These are the symptoms, gentlemen, in this case of relapse. Now, I shall proceed to the interpretation of these phenomena, by pointing out the symptoms that indicate a relapse of typhoid fever; and, on the other hand, the difference between the symptoms of the relapse and those of the first attack.

The most marked symptom, in the first place, is the temperature. In typhoid fever the characteristic feature is the course of the fever,- the gradual ascent of the temperature during the first week, with the evening rise and the morning remission, but each evening higher than the previous day, until the fever reaches its highest point in the second week. This feature is not shown in the relapse. We have seen that the morning temperature of January 8th was 98.4°; in the evening it was 102.4°; then with this morning remission of half a degree, in the evening of the second day we have the highest temperature that has been attained in the case, 105°. This is entirely unlike the history of ordinary typhoid fever. A peculiar feature of the relapse, thus, is the rapid ascent of the temperature. In this case, I repeat, it attained, on the second day of the relapse, the highest point that it had reached in the whole course of the disease. Subsequently, instead of descending by degrees, as in an ordinary attack, it descends rather abruptly, and has no regularity in its return to the normal.

Then we have the re-development of the intestinal symptoms; the enlargement of the spleen; the reappearance of the spots. In reference to these spots, I would say that their appearance so late as the sixth day of the relapse is not common. They are usually an early symptom, coming out on the second or third day. In the original disease, you know that from the seventh to the ninth day is the usual time for the eruption of these rose-colored spots. In this case the relapse does not differ so much as in other cases, for very generally in relapses of typhoid fever the spots appear much earlier than in the original attack, and this furnishes a diagnostic point.

The nails will hereafter show a distinct ridge of altered nutrition to mark this relapse, but at present they show nothing, except a loss of natural polish. The appearance of a ridge upon the nail, as the result of the attack of typhoid fever, will be followed by a second ridge, indicating the occurrence of the relapse. I will bring him again before you after a few weeks, and you will then be able to distinguish these marks of the disease through which he has recently passed, and from which he is convalescing.

It may be asked, "Is there danger in these relapses?" Do the intestinal lesions or typhoid ulcers break out afresh? Yes, we may have fresh ulceration and hemorrhage, which may be fatal; but it is a curious circumstance that the intestinal lesions that are developed during the relapse run a much more rapid course (just as the fever runs a much more rapid course) than in the primary outbreak. As a rule, however, the intestinal symptoms are less grave. The duration of the relapse is usually about nine days, while that of the first attack is three or four weeks, The ulcers run a more rapid course, and cicatrize earlier; therefore, they are not so dangerous as in the original attack of typhoid fever.

Does this relapse end the whole case, or may there be subsequent relapses? Gentlemen, it has been my lot to see two cases, each of which had five relapses; therefore, they survived six attacks of the disease. This

sounds incredible, but I have the temperature-charts that prove it. Both cases are still living. Therefore, relapses are in themselves not necessarily so dangerous to life as one might think. It is bad fortune, certainly, for a patient to have a number of relapses: a man usually considers himself very unfortunate to have a single attack, and doubly so to have a relapse when he thinks that he is convalescent, and begins to congratulate himself upon his return to health; and he is more unfortunate still to have several.

I want to call your attention particularly to the fact that you may have intestinal hemorrhage in this relapse, and to the importance of being on the look-out for it. The necessity of keeping the patient absolutely at rest, and carefully regulating his diet, will be manifest.

As to the causes of the relapses, they are usually believed to be due to indiscretion in diet; but I am of the opinion that this is not the cause. When I was first visiting physician to this hospital, I always, in these cases of relapse, had the forbidden apple or pie diligently searched for, but I must confess that I rarely found it. Indiscretions in diet will, undoubtedly, cause diarrhea; but they will not cause a return of all the phenomena of typhoid fever. Relapses are not due to indiscretions in diet. To what, then, are they due? I can only offer you a probable explanation. It is supposed that the specific germs of the original attack remain in the intestinal tract, and the patient poisons himself by these germs, and the poisoning may take place several times. This theory of the reappearance of the symptoms after the orignal attack has passed is in harmony with the prevailing ideas, which attribute the causation of typhoid to a specific bacillus, which is present in the intestine during the whole course of the disease, and may persist for an indefinite time after apparent recovery.

As regards the treatment, it is the same as in the original attack. The same regulation of diet (principally or exclusively milk); the same precautions as regards the general management as in ordinary typhoid fever; the same measures to allay irritability and promote an antiseptic condition of the intestines, should be adopted; and in the relapse they are even more essential. In the original attack he took naphthalin, and as he has still some diarrhea, we will resume the naphthalin (gr. ij every three hours). To this will be added a little opium (a teaspoonful of paregoric), when the bowels are too frequently moved. There is nothing to say with reference to the treatment other than would be said about the original attack. The case is instructive as showing the phenomena of relapse coming on without warning during apparent convalescence.

The Treatment of Syphilis.—Accepting the dictum that in the treatment of syphilis with mercurials it is the mercury that constitutes the active agent, McNAMARA (*Lancet*, No. 3617, p. 1438) maintains that the best preparation to use is that which in safe, unirritating doses contains the largest proportion of the metal. This indication he has found to be best met by mercury with chalk, of which an adult may take a grain or two grains three times a day, with a grain or more of the powder of ipecac and opium if there be diarrhea. The treatment should be continued for some months.

CLINICAL MEMORANDA.

TWO CASES OF MEMBRANOUS ENTERITIS.[1]

BY S. SOLIS-COHEN, M.D.,
PROFESSOR OF CLINICAL MEDICINE AND APPLIED THERAPEUTICS IN THE PHILADELPHIA POLYCLINIC; ONE OF THE PHYSICIANS TO THE PHILADELPHIA HOSPITAL.

THE essential clinical feature of the condition best known as croupous enteritis, or membranous enteritis, is the discharge from the bowel of mucoid, fibro-mucoid or fibrinous casts; the essential pathologic feature being, of course, the formation of these casts.

The affection is not common, yet, as Da Costa,[2] in his classic study long ago pointed out, it is hardly one to which the term rare may strictly be applied. I have encountered some half-dozen cases in the course of ten years. Two of these were in young hysterical females, not my patients, whom I saw on a few occasions, in the absence from the city of the attending physicians, and at the request of the latter. One patient was a middle-aged and hysterical woman, who presented herself at the medical clinic of Jefferson Medical College Hospital, during my service as chief assistant; the fourth case was likewise that of a middle-aged and hysterical woman, who applied for treatment at my dispensary service in the Philadelphia Polyclinic. (The early records of this clinic were unfortunately lost or mislaid in moving to the new hospital building, and I have no note of the case except in my index of diagnoses.)

Specimens of the discharge from the two other cases are presented this evening. Both patients are males and the cases present sufficient interest to be placed on record.

CASE I. *Membranous enteritis simulating perityphlitis.*—D. W., thirty-three years old, a blacksmith, was sent to my colleague, Prof. J. M. Baldy, at the Philadelphia Polyclinic, by Dr. G. A. Beck, of Danville, Pa., with a request to place him under the care of a medical clinician; and by Dr. Baldy referred to the medical ward, then under my care, February 29, 1892.

From the letters of Dr. Beck and the notes taken by Drs. Gibbon and Knipe, resident physicians, the following account of the case is condensed.

About three years ago the patient began to suffer with severe pain in the hypogastric and right iliac regions. The pain occurred in paroxysms, lasting at first an hour or two; afterward, with slight intermissions, for several days; the intervals between the attacks varying from about a week to so long as two months; the severity progressively increasing.

No information could be obtained as to the character of the discharges prior to August, 1891. At that time a paroxysm of such severity occurred that it was necessary to administer hypodermatic injections of morphine; and the patient was confined to bed for six weeks. The location of the pain, and a tumefaction observed in the right iliac region, aroused the suspicion of perityphlitis, which, however, the subsequent course of events did not verify.

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[1] Read before the Philadelphia Pathological Society, January 26, 1892.

[2] Amer. Journ. of the Med. Sciences, October, 1871, p. 325.

There was passed by stool "something resembling the trachea of a chicken, followed in a few days by something much resembling a piece of intestine; each was about three inches in length. There was no fever and but little gastric disturbance; a tendency to constipation was noted." For some time afterward membranous shreds and casts continued to pass, the discharge being preceded by constipation and paroxysms of colic. The stools did not contain blood.

After this attack, dull pain in the iliac region was constant, but not so severe as to prevent sleep. Paroxysms recurred at intervals of from one to six weeks, and lasted with remissions for one or two days. At their height morphine had to be given. With the passage of membrane the pain moderated, and with its disappearance, the pain ceased. The patient continued in robust health; his family and personal history were devoid of pathologic significance.

On admission the patient was a robust, well-nourished man, presenting nothing abnormal to physical exploration. He complained of a dull pain in the right iliac region, which was not sensitive to pressure. He had not had a stool for a few days. An enema of turpentine (f℥j) and magnesium sulphate (℥j) in warm water and soap-suds (Oij) was ordered to be given nightly. The hardened feces, and later the unformed fecal material, thus brought away presented nothing noteworthy.

On March 2, 1892, the patient complained of an increase of pain in the right iliac fossa, which was now sensitive to pressure; and a peculiarly sensitive spot was found in the location known as McBurney's point. There was impairment of resonance over a somewhat irregularly pear-shaped area in the situation of the cecum, and to palpation a sense of doughy induration was given.

On March 4th, at 5 A.M., the patient was awakened by griping pain beginning to the right of the umbilicus and extending into the right iliac region. Somewhat relieved by hot stupes, it persisted until 7 A.M., when, with much straining, a stool was passed, consisting of unformed feces and fragments of mucous and membranous casts. The enemata were continued, but brought away no more membrane, only unformed feces and strings of mucus. Slight tumefaction in the right iliac fossa persisted.

The patient was free from pain for six days, when, at 10 P.M., pain, less severe than on the previous occasion, began, as before, at the umbilicus and radiated into the right groin, causing retraction of the right half of the scrotum. The tumefaction was observed to increase, and the abdominal muscles became tense. In about three hours the paroxysm terminated, with the discharge of a small quantity of softened feces with much more mucus and membrane than in the stool of a week earlier. There was much straining at stool. With the passage of the membrane, abdominal tension relaxed, pain ceased, and the tumefaction became much less marked.

Three days later intermitting attacks of sharp shooting pain occurred for about an hour in the forenoon, and recurred at 3 P.M., lasting for about half an hour, when membrane was passed in a few fragments aggregating two inches by two inches, and the pain ceased. On the following day nothing abnormal could be found on abdominal exploration.

Four days later the membrane presented was passed, without straining, after the enema. It is flat, thick, tough, white; toughness and whiteness having become more marked since placing it for preservation in diluted alcohol. The patient complained of dull pain in the hypogastrium, and of slight vertigo. From this time forward no unpleasant symptom occurred and no membrane was passed. As the patient could not be assured that no attack would occur in the future, he was about two weeks later discharged at his own request.

Drs. Coplin and Bevan examined the membrane passed March 4th and March 10th. They report that "the casts are made up almost entirely of fibrinous exudate in which are found large numbers of leukocytes and epithelial cells. From the mucous surface at some points will be found evidence of the sloughing of the mucous membrane. There are also evidences of young bloodvessels in the membranous casts. In some points hemorrhage has taken place."

These appearances seem to point to the fact that the process is, in part, inflammatory, leading to the formation of a pseudo-membrane, which becomes partially organized and then separates by a superficial necrosis. Whether the tumefaction in the right iliac region was due to obstruction of the cecum or colon by accumulation of the products of desquamation, or whether the seat of the morbid process was thus indicated, I do not pretend to say. The size of the casts, however, would indicate their formation in the small intestine.

CASE II. *Pseudo-membranous enteritis in a lithemic patient presenting symptoms of vasomotor ataxia* — X. Y. Z., an attorney, about thirty-two years old, has suffered for some two years, following a great grief, with symptoms termed by various American and European clinicians of eminence as those of "gastric catarrh," and of "neurasthenia." There are in his case some important features not relevant to the present communication, except that they indicate a highly neurotic constitution. When I saw him some four months ago, he was much emaciated, obstinately constipated, passing small quantities of urine of high specific gravity, containing uric acid, urates, phosphates, and oxalates in excess, red blood-cells, no albumin, no sugar. This oliguria was doubtless due to the dry diet advised by a former attendant, as it soon disappeared when a normal quantity of water was taken; though the uric acid, urates, oxalates, and hemocytes did not disappear until appropriate treatment had been continued for some time.

The man's sickness began with frequent attacks of vertigo, which had incapacitated him for the duties of his profession; his circulation was poor, so that hands and feet were almost constantly cold; and just before one of his "spells" the lips and nails became blue, the skin of hands and face pallid. I was summoned while he was suffering with a paroxysm of abdominal distress which he said could not be called "pain" or "colic," though he knew no other term by which to describe it. It had ceased when I first saw him, about two hours later.

I cannot say what excited the suspicion of membranous enteritis; probably it was the hypochondriasis, the constipation, and the evident intestinal spasm. At all events, failing to elicit a history of the passage of casts, the patient was asked to observe his stools; nightly

enemata of warm water with soap, salt, and turpentine, being prescribed together with other treatment.

For some two weeks nothing was found in the stools except ordinary mucus; then on one occasion membranous shreds were discovered after an enema, but were not saved; some days later, a mucous cast, fully eighteen inches in length and about three-eighths of an inch in diameter, was passed; the patient being under the impression that it was a worm, which, indeed, to the untrained eye it resembled. It was composed of semi-translucent, whitish, gelatinous material, manipulable with difficulty, showing no structure under the microscope, except that it contained a few small round cells, lymphoid in appearance; it dissolved readily in alkalies. I regret that its coagulability with acid was not tested.

About a week or ten days later the membrane exhibited was passed. Similar discharges, gradually lessening in quantity and frequency, continued to be observed at intervals for about three weeks. There has been none discovered for more than five weeks past.

Unlike all other cases that I have observed, in this instance these matters were found in ordinary, well-formed stools, that were passed without straining and spontaneously; the discharges were not preceded by colicky attacks or pain of any kind; for the patient's general condition is steadily improving under treatment, so that he is not constipated, is much less hypochondriacal, not at all neurasthenic, eats well, sleeps well, attends to his office and court practice, and has had but two vertiginous spells since coming under my observation.

In this case I think we have a much earlier stage of the affection than any that I have previously encountered, or of which I have read the report. The diagnosis made as to the patient's general condition is lithemia, vasomotor ataxia, gastro-intestinal catarrh, with marked intestinal indigestion. The membranous enteritis I am inclined to look upon as a sequel to the intestinal catarrh, conditioned by the disturbed state of the trophic and vascular system.

The fact that hysteria or hypochondriasis is almost invariably associated with the condition, lends color to the theory that it is literally a trophopathy of neurotic origin, and its most probable mechanism is disturbed vascularization. Even in the other case I have reported in which inflammation probably exists, the paroxysmal occurrence of the attacks indicates a neurotic element.

Bacteriologic investigation was instituted by Dr. Coplin, but his results were not decisive, probably owing to the contaminated state in which the discharges reached him. I am not inclined, however, to regard the condition as in any particular due to microbes. Ordinary intestinal irritation or catarrhal inflammation is its probable starting-point, a neurotic constitution its determining factor.

The American Electro Therapeutic Association will hold its third annual meeting at Chicago on September 12, 13, and 14, 1893. A cordial invitation to be present is extended to all members of the profession interested in electro-therapeutics.

POISONING FROM THE USE OF ENEMATA OF CARBOLIC ACID FOR THE EXPULSION OF OXYURES VERMICULARES.

BY J. A. HAWKINS, M.D.,
OF PITTSBURG, PA.

A MAN recently came to me complaining of pruritus ani, due to seat-worms (oxyures vermiculares.) As I had treated him for the same condition several months previously, I instructed him to use the injection that I had then recommended—a solution of carbolic acid, twenty grains to a quart of water. He stated that his wife and his ten-year-old child were similarly affected, not having been completely cured by the treatment employed. He was instructed to try a solution of the acid again, using, however, a small teaspoonful to the quart of water instead of the twenty-grain solution, and also to expel it at once from the bowel.

Several hours later, on my return from a professional call, I found the man awaiting my coming. He seemed very much excited and told me that he had left the acid with his wife and had then gone out; on his return he found her sitting on the commode. He spoke to her, and she succeeded in answering in but a very incoherent manner. On inquiring as to what was the matter, she answered that she "did not know." The man then became alarmed and went for me. When I arrived I found the woman sitting in a chair in which she had been placed by a neighbor. She seemed rational, and stated that she remembered nothing from the time that she took the enema until she was placed in the chair. She did not recall her husband speaking to her, or, in fact, that he had been in the house. She had given her ten-year-old daughter an enema, but we found the girl asleep, and on being awakened she stated that she felt all right.

I suspected that the drug had occasioned toxic symptoms, but as the woman was of an hysterical temperament and as the menstrual period was expected in a day or two, I found myself between two fires and concluded to try the injection on myself. At five minutes of twelve o'clock, midnight, I injected into my bowel one quart of water, containing in solution two teaspoonfuls of carbolic acid. I sat down in my chair and watched the clock, intending, if any alarming symptoms should arise, to expel the fluid. I noticed the clock strike twelve, and then my ears began to buzz and I became dizzy. The tinnitus aurium produced by quinine was slight in comparison. This is all I remember until I awoke in bed at three o'clock in the morning, undressed and with my clothing in its accustomed place. My mind was a blank from two minutes past twelve o'clock until three o'clock. My wife stated that I had came upstairs some time in the morning and had tried the door (which she had locked when I was called out), and when she opened it I made some remark in a rambling way; that my conduct seemed strange, and that my eyes had a peculiar look about them; that I retired without saying anything further, and had apparently fallen asleep immediately. My mind now was perfectly clear. I remembered taking the enema and recalled the buzzing, and that is all. I knew not if I had turned out the lights or how or when I retired; so I dressed and went down stairs to investigate. I

found that I had slacked my fires, turned out all the lights, lit my night-lamp in the office, and had apparently gone to the closet, as I remembered how it looked before taking the enema, and it was differently arranged when I now entered. I am positive that I expelled the solution before retiring.

I do not recall, nor can I find, that symptoms of carbolic-acid intoxication like the foregoing have been reported; but as similar manifestations were produced in two different individuals, I cannot explain the phenomena otherwise than that they resulted from the acid. I did not notice any great change in the urine such as is usually mentioned; and as to the odor—well, I can still imagine I smell carbolic acid.

In the case of my patient absorption must have been very rapid, as she states that she evacuated the contents of the bowel at once; but I really doubt this, as in my own case there was no knowledge of time by which one would know how long the fluid was retained. There was not the least sensation of burning or stinging imparted during the injection, but the parts felt sore, or as if there was an external hemorrhoid present, for several days thereafter.

Prof. R. Köhler (Wood, 7th edition, p. 604) mentions the cases of two joiners who had applied externally half an ounce of carbolic acid in solution for scabies, with similar symptoms. One was found dead; his fellow suffered from unconsciousness and drunken delirium, ending in restless sleep.

In my own case, there was the dizziness and the unconsciousness, and, in addition, very pronounced tinnitus aurium and apparently sound sleep, as I felt as though I had slept all night when I awoke at 3 A.M.

This experience has taught me that carbolic acid is a more dangerous drug than is by some supposed, and that it should be used with great circumspection if a large surface is to be exposed to it, as in case of pruritus, etc.

From the rapidity of absorption in these cases, it can readily be seen to what purpose the bowel may be used for the administration of nourishment and medication.

810 PENN AVENUE.

THE TREATMENT OF CARBUNCLE.

BY W. M. CAPP, M.D.,
OF PHILADELPHIA.

IN treating a case of carbuncle recently, excellent results were obtained by a strict observance of antiseptic principles. The patient was well advanced in years, of spare habit, nervous temperament, and subject to attacks of acute dyspepsia. He was engrossed in pressing affairs of business, which kept his life more or less on a continuous strain. The condition was aggravated by the oppressive and moist heat of summer weather. When first seen, there was an area of induration and inflammation, fully half as large as the palm of a man's hand, upon the back of the neck, deeply seated, to the left of the vertebral column. At the center of the swelling was one small opening, with a discharge of pus at about a point where the edge of the collar might have set up an irritation. There was no complaint about the general health, but inquiries developed a recent history of a somewhat diminished flow of urine, of a specific gravity rather higher than normal. This was very soon corrected by a few doses of ammonium acetate, with which was combined for general tonic effect some tincture of ferric chlorid. During the whole treatment a simple tonic pill was given after each meal, not so much because of existing indications, as to fortify digestion, and with a view to forestall any depressing effects of the disease. Suitable diet was also directed. Beyond this, no internal treatment was used. Locally, great care was taken to keep the sore and its whole neighborhood clean, in a surgical sense, by antiseptic aqueous solutions, by preference, as neater and more agreeable than greasy applications and as equally effective. The whole area was copiously bathed with a strong solution of boric acid in distilled water, to which was added a little sodium borate and about 20 per cent. of alcohol. By means of a pipette the openings of the sore were gently explored and thoroughly douched with a 1 : 500 mercuric chlorid solution, and finally the whole was covered by a pad of lint saturated with the boric-acid solution, kept moist and in place by an impervious cover and bandage. The bathing, douche, and dressing were repeated three times daily, and in twelve days suppuration had about ceased. Granulating surfaces appeared, the surrounding induration had greatly diminished, and the active inflammation having ceased, the appearances of a healing sore were presented. During the progress of the treatment there was much discharge from nine openings, all of which freely admitted the mercurial douche.

The antiseptic solutions so intimately applied to the suppurating surfaces, and the frequent dressings, doubtless greatly lessened the pain, kept down the inflammation, and curtailed the suppurative process. The frequent evacuation of pus prevented the formation of a "core" and diminished the chances of blood-poisoning from absorption. Also, by this means pressure was removed from the surrounding capillary circulation, which tended to preserve and restore to health much of the adjacent tumefied tissues. Certainly the course of so angry a sore and the time to recovery was brief, and it seems fair to give the credit to the agents used and the mode of their application.

The cure was complete and there has been no indications of a recurrence of the trouble, and the health of the patient has been good during the six months that have elapsed since the treatment.

In a general way, poultices in the treatment of furuncle and carbuncle, as increasing the inflammatory process, are to be objected to. They should be used only when special indications call for them. The same remark applies to the use of the knife, because the system would be doubly taxed in its efforts to heal both the sore and the knife-wound.

2211 SPRUCE STREET.

A CASE OF "ACCIDENTAL" HEMORRHAGE, WITH UTERINE INERTIA.

BY F. W. LOWRY, M.D.,
OF IRON MOUNTAIN, MO.

IN the early morning of June 11, 1891, I was called to see Mrs. O., twenty-eight years old, at term in her fourth pregnancy. In the latter part of the night she had had pains characteristic of beginning labor, which became

suddenly more intense about 4 A.M., when a flow of blood was noticed. When I arrived, the hemorrhage, which was slight, had ceased, and the patient complained only of slight pain in the back.

Vaginal examination discovered the cervix low in the vagina; the os dilated to about the size of a silver quarter; the cervix flaccid; the membranes intact; the head presenting. On abdominal palpation the uterus was found lax.

After an hour, there being no increase of pain and no further show of blood, I left; but called twice during the morning—the last time just before noon, when the pain had ceased entirely. Examination revealed no change since my first visit.

I did not hear from the case again till the evening of June 15th, when I was sent for in great haste, and informed that the patient was flooding badly. I found her with pallid countenance, cold extremities; moist, clammy skin; sighing respiration, weak and rapid pulse. The clothing and bedding were saturated with blood, which was dripping on the floor beneath. There was still a slight flow of blood from the vaginal outlet. Examination revealed about the same condition as was present in the first instance. The head occupied the right oblique diameter. Two fingers could be passed their full length through the os and swept entirely around without reaching the placenta. There was not, nor had there been, any pain.

The question of treatment now presented itself. Immediate delivery was imperative. I believed the uterine inertia, so marked in this case, to be due, partly at least, to over-distention; and later developments proved this to be true.

First ascertaining that the bladder and rectum were empty, and being satisfied that the os would not impede delivery, I gave a dram of fluid extract of ergot in hot water, to insure contraction after the escape of the liquor amnii, and to secure permanent contraction after emptying the uterus, intending to rupture the membranes and deliver immediately with forceps. In ten or twelve minutes the effect of the ergot became manifest in vigorous uterine contractions, a widening os, and tense membranes. I now ruptured the membranes, when it became apparent that the use of the forceps was precluded, spontaneous delivery occurring in a few minutes. The child, a ten-and-a-half-pound boy, was very slightly asphyxiated. The placenta was delivered immediately by expression, a little less than an hour after my arrival at the house. It was very large and extremely friable. The uterus contracted firmly—the tonic contraction of ergot. The mother's pulse now was nearly normal in rate and tension. Before leaving, I repeated the dose of ergot as a safeguard against relaxation. The patient's lying-in was altogether normal. She informed me that between the 11th and 15th she attended to light household duties as usual; that on the evening of the 15th, she was sitting in her room sewing and talking with some friends who had called, when, without warning, the hemorrhage occurred. She lost consciousness, was removed to her bed, and restoratives were applied.

In the latter months of pregnancy there was considerable daily loss of blood per rectum, which ceased a few days before labor and did not return afterward. It did not cause any perceptible impairment of health. It may have served the useful purpose of relieving tension in the friable utero-placental vessels.

This case is reported solely because it presents some unusual features. While ergot accomplished the delivery, it was not administered for that purpose. In spite of the fact that this case seemed specially adapted for the peculiar action of ergot and of the remarkably rapid expulsion of the child, there was some asphyxia, due, I am convinced, to continuous pressure upon the cord and placenta after the membranes were ruptured. Nevertheless, I believe that in selected cases of uterine inertia ergot is indicated—provided the hand that administers the ergot can also, if necessary, reinforce or modify its action with the forceps. The ability to select the cases would presuppose the latter qualification.

MEDICAL PROGRESS.

Cystic Tumor of the Brain Successfully Operated Upon.—At a recent meeting of the New York Neurological Society, Dr. LEO STIEGLITZ reported the case of a woman, twenty-five years old, without hereditary taint and history of previous traumatism or convulsions, who, while quietly talking to her husband, suddenly felt twitchings in the thumb and forefinger of her right hand; the convulsive twitchings spread rapidly, extending to the shoulder and face, and led finally, within the course of a few minutes, to a general seizure, with loss of consciousness, cyanosis, frothing at the mouth, and tonic and clonic convulsions. A similar attack occurred seven weeks later, followed by a number of others. A localized cerebral lesion was suspected, although there was no headache, nausea, giddiness, choked disc. The bromides were given, and after a time there were no general convulsions, but simply convulsive twitchings confined to the right hand and forearm, and always beginning in the thumb and forefinger. These attacks occurred almost daily. Although no history of syphilis could be obtained, specific treatment was instituted, but no improvement followed. In the course of time, a marked paresis of the right hand developed. The deep reflexes were exaggerated, the more decidedly on the right. The urine contained neither albumin nor sugar. There was no elevation of temperature. Sensation was preserved, except for a feeling of numbness in the right hand and arm. A diagnosis of organic lesion, probably a tumor, situated in the left anterior cerebral convolution, was arrived at. An operation was decided upon. A lateral opening in the skull having been made, the dura was seen to bulge but slightly into it. An area on the dura about the size of half a dollar, presented a diffuse yellowish tinge, different from the color of the adjacent dura. The application of the poles of a small faradic battery to the unopened dura, promptly located the center for the movements of the hand and fingers, and the point corresponded with the discolored area referred to. When the dura was opened, the cortex of the brain showed no apparent change. A vertical incision into its substance was followed by a gush of yellow serous fluid, none of which, unfortunately, was saved. Perhaps one ounce of fluid escaped. The walls of the cyst were found to be perfectly smooth. A small layer of gray matter was removed from the center ex-

posed, to prevent disturbances that might develop from possible secondary sclerotic changes. There was but little shock after the operation. On the following day the patient had no power in her right thumb and forefinger, and could move her other fingers and the entire right arm but very slightly. These symptoms gradually improved. Four weeks later the patient had slight convulsive twitchings in her right hand, arm, and face; after the lapse of another week she had more violent twitchings. Ten days later the scalp wound was opened, and the flap of skin was found adherent to the dura. Probing failed to reveal a reaccumulation of fluid in the cyst. The adhesions were separated, and a flexible gold plate was inserted. Two days afterward slight twitching occurred in the three ulnar fingers; the patient could move her fingers, hand, and arm quite extensively. Upon examination, three months later, it was found that the patient had lost the sensation of position in the fourth and fifth fingers of the right hand; she could not tell whether they were flexed or extended. The strength of her hand and arm was greatly increased. In the following month there was considerable twitching in the right arm and face. The patient had been kept on from fifteen to thirty grains of potassium bromid per day following the operation. The conclusion is expressed that the condition is dependent upon the presence of a glioma.

A New Theory of Sleep.—ROSENBAUM (Thesis, Berlin, 1892; *Centralbl. f. klin. Medicin*, 1892, No. 49, p. 1054) defines sleep as that condition of consciousness in which the psychic and physical forces are reduced, in greater or less degree, in accordance with the individuality, below the level normal to waking, or under circumstances are entirely suspended. This reduction of force follows as the result of preceding fatigue of the nervous system induced by the activity of the waking hours. The real essence of fatigue resides in a swelling of the nerve-cells, in the presence of an increased quantity of water in the nerve-substance. This absorption of water stands in inverse proportion to the nervous activity; the greater the quantity of water the slighter the irritability, which may disappear entirely. The absorption of water occurs in consequence of the chemical decomposition of the nervous tissues that takes place as a result of the activity. The water thus produced is expired by the lungs as vapor, a small portion in the course of the day, the larger portion, however, during the night, in the course of sleep. The absorption of water from the various organs into the venous circulation is governed by the laws of hydro-diffusion, and is dependent upon the volume and density of the blood, upon the presence of solid constituents, the velocity of the blood-stream, etc. The dissipation of water into the air is governed by the laws of gaseous diffusion, and is dependent upon the air-pressure and the matters contained in the water. On account of the disproportion between the absorption of water and nervous activity, those centers that have furnished the smaller proportion of work will be aroused the earlier—there thus result partial sleep and partial waking at the same time. The ideas cannot be associated—and dreaming is the result. If, on the one hand, a portion of the centers and motor nerves are so far aroused as to send out impulses and convert these into mechanical work, while, upon the other hand, the remaining centers are still so profoundly wrapt in sleep as not to be aroused by these stimuli, the condition of somnambulism results. The nutritive elements assimilated and stored up in the organism take the place of the water thrown off during sleep. The recuperation of the physical and psychic forces after sleep results from this interchange. Intelligence stands in inverse ratio to the percentage proportion of water in the brain, and is to be measured by this standard—at least in the child.

A Fatal Case of Acute Ascending Paralysis.—WATSON (*British Med. Journal*, No. 1667, p. 1286) has reported the case of a coal-miner who, after partaking of beer to the point of intoxication, lay on the damp ground and went to sleep for four or five hours. He was then carried home and put to bed. On the following morning, on attempting to rise, he found that he could lift his legs only with great difficulty, and that the thighs were weak; there was also an aching in the lower part of the back, with much formication in the feet and hands. The symptoms grew progressively more aggravated, and after five days there was complete paraplegia. There was no anesthesia, no ankle-clonus; and the knee-jerks were absent on both sides. The pupils reacted sluggishly to light and in accommodation. Heart, lungs, and urine presented no abnormality. A day later, the lower extremities were entirely paralyzed, and the abdominal muscles were becoming affected. There was, however, no incontinence of urine or of fecal matter. During the day the paralysis rapidly extended upward, involving successively the abdominal, the lower and the upper intercostal muscles; next those of the hands, arms, and shoulders, and, finally, the diaphragm, swallowing becoming impossible, and suffocation ending life. Toward the last, speech became affected, and the masticatory and facial muscles became markedly weakened, so that the eyelids could not be firmly closed or the mouth pursed up, as in whistling or blowing. In treatment counter-irritation was applied to the spine and ergot was administered internally. At the post-mortem examination the viscera were found healthy. The membranes of the cord were congested. The cord itself presented no lesion, macroscopically or microscopically.

The Etiology of Essential Anemia.—KRÜGER (*St. Petersburger medicin. Wochenschr.*, 1892, No. 50, p. 471) expresses the opinion that anemia is never a disease *sui generis*, but is in every instance only a symptom. In a study of the comparative determinations of the residuum and of the hemoglobin in the blood of the afferent and efferent vessels of the spleen he found that the blood of the splenic vein was richer in dry residue and hemoglobin than the blood of the splenic artery. The increase or diminution in blood coloring-matter corresponded with the increase or the diminution of the dry residue. The conclusion is arrived at that hemoglobin, in addition to being broken up, is also manufactured in the spleen, construction, as a rule, exceeding destruction. Finally, the view is expressed that pernicious anemia and chlorosis, both of which are considered as the expression of a common condition of varying intensity, are dependent upon irritation of the sympathetic nervous system, resulting in altered function of the spleen.

Spontaneous Closure of Rupture of the Uterus —RICHTER (*Deutsche med. Wochenschr.*, 1892, No. 45, p. 1012) has reported the case of a woman in labor to whom he was called by a midwife, because, at the time when it was expected that the head was about to be expelled, the parturient suddenly vomited and lost consciousness and the pains ceased. Rupture of the uterus was at once suspected and steps were taken to turn and extract the child. The child was delivered in a state of asphyxia and could not be resuscitated. It became necessary to remove the placenta manually. This was found free in the uterine cavity, while a defect was noted on the left side of the anterior wall of the uterus. A two-pound sandbag was placed upon the abdomen, fifteen minims of ergot were given every hour for three hours, and fifteen drops of tincture of opium were administered three times daily. There was inconsiderable hemorrhage and the woman slowly recovered.

Prurigo.—At the Second Congress for Dermatology, recently held at Vienna, VIDAL (*Monatshefte f. prakt. Dermatologie*, xvi, 1, p. 11) expressed the view that prurigo, like lichen simplex circumscriptus, is a chronic papular neuro-dermatitis, anatomically belonging in the category of papular affections, but pathogenetically being a dermato-neurosis. The affection is not an independent disease, but results from a number of pathologic conditions, of which the two most important are a neurotic disposition and a lymphatic constitution (the scrofulous diathesis of older authors.) The affection usually makes its appearance in the first two years of life, though its manifestations may be first observed during a later period of childhood, or still later. Although recovery is not the rule, it is not of rare occurrence. Well-directed management may be followed by improvement and remissions of long duration, particularly if the skin be protected from irritation of all kinds.

Incoercible Vomiting and Salivation of Pregnancy, Requiring Abortion.—DAVIS (*Chicago Clinical Review*, i, 3, p. 221) has reported the case of a deutipara, thirty-seven years old, in which, in the third week of pregnancy, vomiting and salivation set in. For more than a month the usual remedies were employed, but without success, the phenomena persisting, and the woman steadily losing ground. Finally, it was determined to empty the uterus. The os was first dilated by means of tents, and a soft-rubber male catheter was afterward introduced into the uterus. After a little time the embryo was expelled, but it was necessary to remove the secundines instrumentally. No unpleasant sequelæ appeared, and the vomiting and salivation gradually subsided. The woman had suffered similarly from the third week throughout her previous pregnancy, but in less intense degree.

THERAPEUTIC NOTES.

Potassium Bitartrate for the Ascites of Hepatic Origin.—SASAKI (*Berliner klin. Wochenschr.*, 1892, No. 47, p. 1184) has reported eight cases of chronic interstitial hepatitis of portal type, one case of biliary type, and two cases of syphilis of the liver, in all of which the ascites present was greatly relieved by the administration of full doses of potassium bitartrate. If the nutrition be impaired, iron, quinine, cod-liver oil, and good diet may be given conjointly. Not much benefit is to be expected when the ascites is dependent upon malignant disease. The dose varies from two to ten drams in the course of the day; an average quantity would be from two and a half to five drams daily; the best dose is that which will cause two or three bowel-movements. If the accumulation of fluid is very large, paracentesis may be practised in conjunction with the administration of potassium bitartrate. The drug is, as a rule, well borne, and in cases may be given for months. Its good effects are to be ascribed to its laxative and diuretic action.

Arsenic as a Prophylactic.—Governed by a statement that persons taking arsenic are insusceptible to vaccination, BRYAN (*Brit. Med. Journ.*, No. 1665, p. 1187) employed the drug as a prophylactic in scarlet fever, and believes that he has by this means checked an epidemic. In a family in which one child had severe scarlatina, arsenic was given to the other two children, who were not attacked, though they continued to be about the patient until she died, after three weeks. In another family, a boy, seven years old, had scarlet fever, but the four other children, from three to eleven years old, did not contract the disease; while the mother aborted, but was not herself attacked by the disease. There is evidence that arsenic is valuable also as a prophylactic against diphtheria and influenza. Bryan gives gr. $\frac{1}{10}$ of arsenious acid, or ♏ij. of the official solution of potassium arsenite, three times a day for the first week and afterward twice a day.

Ferric Chlorid in the Treatment of Diphtheria.—HUEBNER (*Therapeutische Monatshefte*, vi, 12, p. 640) reports the treatment of fifty-two cases of diphtheria by means of topical applications of the solution of ferric chlorid, with but two deaths; scrupulous attention at the same time being given to the general management of the case.

ROSENTHAL (*Ib.*, p. 641) reports the employment of a 2 per cent. solution of ferric chlorid in water to which a small quantity of glycerin has been added, of which from a teaspoonful to a tablespoonful was given every hour. Seventy-nine cases were thus treated, and of these six terminated fatally.

For Hiccough.—In a case of obstinate hiccough in an elderly man of gouty tendency, SYMES (*Dublin Medical Journal*, December, 1892, p. 488) succeeded in controlling the spasm by the administration, every sixth hour, of the following combination:

℞.—Potassii iodidi	. . .	gr. iij.
Chloral. hydrat.	. . .	gr. v.
Potassii bromidi	. . .	gr. vij.
Potassii bicarbonatis	. .	gr. xv.—M.

Ergot for Atony of the Bladder.—REGINALD HARRISON (*Clinical Journal*, i, 3, p. 95) warmly recommends the employment of ergot in the treatment of atony of the bladder, and also of hematuria associated with prostatic enlargement:

℞.—Ext. ergotæ fluid.	. . .	gtt. x.
Aquæ cinnamomi	. . .	f℥j.—M.

S.—Three times daily.

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STATE BUREAUS OF LIVE-STOCK INDUSTRIES.

THE scientific investigation in public and private laboratories of the causes of diseases that afflict the human family, especially those of microbic origin, with the object of their prevention and cure, is of immense importance, not only for the prospective value of discoveries that may be made in the line of original research, but also for the benefit to be derived from teaching what has already been discovered. There is a wide range for exploration and research in the domain of the etiology of disease, and there is also room for the dissemination of the results of discoveries that have given to modern investigation so much merited distinction.

A collateral branch of inquiry, likewise most beneficial in its results, is that which embraces the investigation of diseases that affect domestic animals, both those that may be transmitted to man, and those that are peculiar to animals. The economic advantages of such investigations are very great, as it can be shown beyond a doubt that millions of dollars are lost every year in the United States by the ravages of disease among domestic animals, which belong to the preventable class. To save this great loss, as well as to restrict and suppress disease that may be conveyed in various ways from animals to man, is certainly a humanitarian undertaking, and as such deserves encouragement and support. The Bureau of Animal Industry instituted under the general government has this twofold object in view, but the labors of this organization should be supplemented by efficient bureaus under State management, all working in coöperation for the same end. Such an arrangement would secure to the State the manifold advantages of an authoritative organization, charged with the investigation and the supervision of measures for the suppression of diseases communicable from animal to animal, and from animal to man. It could with advantage be attached to the State Agricultural Department, or to the State Board of Health. Its functions should not only be to investigate these diseases and seek to improve the knowledge already procured, but also to disseminate information amongst farmers and stock-raisers, and furnish data upon which the needed legislation could be formulated, as well as to give advice and lend aid in stamping out diseases that occasionally appear amongst herds of cattle.

We have been led to these remarks by the perusal of a bill recently introduced in the Legislature of Nebraska for the establishment of a Bureau of Live-stock Industries, and for the erection and maintenance of a patho-biologic laboratory for the investigation of infectious animal diseases in connection with the work of the said bureau, and for the further protection of the interests of stock-breeders. It is proposed that the officers of the bureau shall consist of a veterinarian and assistant, a chemist, veterinary inspectors, and such other officials as may be found necessary. The director of the patho-biologic laboratory shall be an experienced veterinarian, who must have an acknowledged reputation in the investigation of live-stock diseases. The veterinarian is made responsible for all the work of the bureau, and for the general direction of its officers; he is also to make or direct and supervise continuous and careful study of the diseases of live stock, especially with a view to their prevention, cure, or eradication.

The assistant veterinarian, as chief executive officer of the bureau, is responsible for the faithful and prompt action of the veterinary inspectors, and such other officers as may assist in the work. He is also charged with the duty of supervising the traffic and movement of live stock within the State in its relation to the spread of infectious diseases. The execution of the laws and regulations for the

suppression and prevention of infectious or other diseases in the live stock of the State is placed in the hands of the sheriffs of the counties, the marshals or chiefs of police of cities or towns, or such officers as are charged with the execution of the laws in general. The officials of the bureau are authorized to enter any premises on which infectious disease is known to exist among any species of domestic animals, or is suspected to exist, for the purpose of examining said animals, and of executing the laws of the State. Power is given to condemn and kill any animal or animals in which an infectious disease exists, or is supposed to exist; or to securely quarantine such animals, according to circumstances. Provision is made for indemnification of the owners of animals after appraisement, but only in certain cases.

An important provision of the bill is one that requires the owner or owners of live stock, and any person who may have knowledge of the existence of any infectious disease in any live stock in the State, or who may have knowledge of symptoms that excite a suspicion in his mind that the disease may possibly be infectious, to immediately notify in writing the sheriff of the county, or proper officer, of the existence of such disease, or of the existence of his suspicions.

Selling or disposing of any animal or animals in which an infectious disease exists; or bringing into the State such diseased animals; or allowing the same to be with healthy animals, is made punishable by a heavy fine. Stock-yards must be provided with a competent inspector at the expense of the owners. Railroads are prohibited from transporting diseased animals. Provision is made for disinfecting cars in which such animals may have been transported.

The bill appears to have been drafted by a competent hand. Its provisions are comprehensive, wise, and salutary. The effect of their efficient enforcement would be in time to eradicate from the State those diseases that are so destructive to live stock, and that in some cases are dangerous to the human family, and thereafter to guard against invasions of disease. Leaving out of the question the protection of human life, the immense economic benefits to be reaped from the enforcement of such a law are alone sufficient reason why it should receive legislative sanction.

The sooner people discard the idea that they have a license to do as they please with what they call their own, independently of the influences of their acts upon the community, and learn to yield a hearty coöperation with the beneficent provisions of the law intended for the weal of the entire community, the sooner they will realize the advantages and protection that such laws afford them. It would be well if each State had its Bureau of Animal Industry and hearty coöperation were established among them; for the advantages of concerted action would be prompt and general, and would show in striking contrast with the results of the efforts of the few isolated stations in the country, which are hampered and restricted through the lack of coöperation on the part of other States.

THE INFECTIOUSNESS OF HERPES ZOSTER.

WHILE not a common affection, herpes zoster is not at all a rare affection. Usually an acute disorder of brief duration, tractable and self-limited, it generally falls into the hands of the general practitioner rather than of the dermatologist. The disease is usually supposed to be a tropho-neurosis dependent upon lesions of the nervous system, and most commonly an affection of the peripheral nerves. The condition has been observed in conjunction with traumatism, erysipelas, syphilis, malaria, rheumatism, tuberculosis, and catarrhal affections.

WASILIEW[1] takes issue with the commonly accepted view as to the etiology of herpes zoster, basing his conclusions upon a review of the literature and upon a study of 274 cases gathered in a collective investigation by the Medical Society of Thüringen. He finds many reasons for excluding the nervous influence and for accepting an infectious origin. He points out that the phenomena presented by the disease clinically correspond closely with those observed in other infectious diseases. There is usually a prodromal stage, which may be marked by malaise, nausea, headache, gastric derangement, and local itching or burning. Fever is not uncommonly present, sometimes before the appearance of the eruption; at other times after the eruption has appeared. It may last two or three days, to disappear with the eruption, or it may persist after this has disappeared. In a small number of cases involvement of the nearest lymphatic glands has been observed. At the site of the eruption there is usu-

1 Herpes Zoster und dessen Einreihung unter die Infectionskrankheiten. Besonderer Abdruck aus der Correspondenz-blätter des allgemeinen ärztlichen Vereins für Thüringen, Jahrgang xxi, No. 5. Jena: Gustav Fischer, 1892.

ally burning, itching, or pricking, and commonly there is intense neuralgic pain. There are on record not a few instances of epidemics of herpes zoster, and evidence is not wanting as to direct infection. One attack usually confers immunity to subsequent attacks, though, as in other infectious diseases, recurrence sometimes takes place. Finally, protozoa have been found in the diseased skin.

In antagonism to the view of the nervous origin of the disease, it is pointed out that the affection does not always pursue the course of a single nerve, as has been stated; neither is it always confined to one side of the body. Its distribution is better explained by the blood-stream. In some cases lesions of the nerves have been found; the vessels have, however, usually suffered as well. In a few cases no changes whatever have been demonstrable. It is not at all unlikely that under the conditions first noted the changes in the several tissues have been due to a common cause.

The views outlined in the foregoing can thus far be considered only as hypothetic, and in support of which further evidence must be presented. The theory is on its face a plausible one. Careful observation, however, with the new light shed upon the subject, will be required for its substantiation before it can receive general acceptance. One cannot be too guarded at this day, when the tendency is so universal to ascribe all affections to a definite specific infection.

EDITORIAL COMMENTS.

The Parasitism of Disease.—The list of diseases of demonstrable parasitic origin is constantly growing. An analysis of the successive stages through which our views upon the infectious diseases have passed makes an interesting study. For a while investigators were bent upon finding a specific microorganism for every well-defined disease. It took some time to learn that while the microbe is the most important factor in the development of the given disease, it is not the sole element. Then began the study of the products of the bacteria, which was soon followed by remarkable developments in the direction of immunity and cure. For a time the vegetable organisms occupied almost universal attention. Now the scene has changed. With Laveran's description of the hematozoön of malarial fever a new line of investigation was opened, in which but little progress was made until recently. Great interest attaches to the study of the animal parasites of certain infective diseases. We know that a form of dysentery is dependent upon a protozoan ameba. Testimony is accumulating in favor of the etiologic dependence of carcinoma upon animal organisms. More recently still an observer describes characteristic animal organisms associated with measles, scarlatina, syphilis, and smallpox. We conclude as we began: The list of infectious (parasitic) diseases is constantly growing.

The Official Languages at the Pan-American Medical Congress.—*The Deutsche medicinische Wochenschrift*, of January 12, 1893, p. 47, contains an open letter from the distinguished German surgeon CZERNY (who is an honorary member of the American Surgical Association), addressed to our own MASTIN, politely declining an invitation to attend and participate in the sessions of the Pan-American Medical Congress, because, as he quotes, "the languages of the Congress shall be Spanish, French, Portuguese and English," "although remarks in any other language will be permitted, provided one of the members present expresses a willingness to make a translation into one of the four official languages." We presume that German was not included in the list as not being one of the languages of any of the countries of America, but, as CZERNY points out, the important place that German literature holds in the scientific world; the large number of Americans that complete and elaborate their medical education in Germany, and the frequency with which the German language is used in parts of America, would seem to make it not only desirable, but also imperative, that addresses at the Congress be permitted to be made also in German, unless it is intended that the proceedings be conducted only in the languages of America.

The Function of the Thyroid Gland and the Therapy of Thyroid Disease.—The function of the thyroid gland is an undeveloped chapter in human physiology. That this organ subserves quite an important part in the animal economy would seem demonstrated by recent experimental and surgical experience. Whether the influence be a nutritive or a chemical one, it is clear that the nervous system bears the brunt of thyroid disease. It is reasonable to assume that the thyroid, directly or indirectly, neutralizes certain products of normal metabolism, which, unacted on (in consequence of the removal of the functional influence of the gland), by their presence give rise to the phenomena that we recognize clinically as exophthalmic goiter, myxedema, cretinism, and the cachexia strumipriva, as well as other conditions, without a definite place in our nosology. The recognition of this fact has led to the therapeutic employment of the thyroid gland or of an extract prepared from the gland, by subcutaneous injection, by grafting or by the mouth;

and to the precaution of not removing operatively the entire gland; the results of which in turn support the view of the function of the gland suggested.

An Illustration of the Fallacies of Statistics.—It is an old saw that statistics can be made to prove anything. That they must be used with intelligence, and not mechanically, is well known. This fact cannot be better illustrated than by the statement of an able ophthalmologist of England, who, in a recent issue of the *Lancet*, reports in 10,000 cases of eye disease 4441 cases of emmetropia. American oculists at once recognize that their European brethren understand the term emmetropia very differently from themselves, and that they also differ very greatly as to the proper methods of its determination. It is an important omission on Mr. Carter's part that he does not define his terms. Some of our best ophthalmic surgeons doubt if they have ever seen a case of emmetropia, and at best the proportion is exceedingly small. In the same way that in 10,000 cases, 3148 should be myopic and only 2323 hyperopic, is widely at variance with American case-record book.

Tammany vs. The People of the United States.—With absolute unanimity the New York Academy of Medicine has condemned the New York quarantine system and management, and has appointed a committee to go to Washington and protest against the mutilated and crippled Quarantine Bill now pending before the Senate. A similar action had previously been taken by the College of Physicians of Philadelphia. The voice of the entire medical profession should be heard no less plainly and indignantly against the degradation and shame of endangering the lives of the whole people for the financial benefit of a crowd of politicians. It is now simply a question of choice between the national health and safety and the continuance in office and plundering of a few incompetent ward-politicians. If every medical society would also act as it should there would soon be an end to this brutal and outrageous selfishness.

A National Health-Organization.—However important the nationalization and stringent systematization of quarantine may be (and no public health measure is more so), it yet remains equally true that to prevent and stamp out disease within the lines is quite as necessary, and in the long run, is even more important. There are to-day, for example, thousands of unacclimated immigrants in the Southern States, and with warmer weather an epidemic of yellow fever, always more or less endemic there, may burst forth with malignant energy. Simple common sense and self-preservation must bring about a national health-organization, whose office it shall be to deal with all questions appertaining to the prevention of disease, if possible, and failing in this, putting to use a machinery capable of coping with widespread epidemics of any and all kinds when they arise. Why must we wait till taught by the bitter lessons of experience and death?

An Epileptic Colony in New York.—A committee of the State Board of Charities has recommended to the Legislature the purchase of a farm in Livingston County, to be used as a colony for the 500 or more epileptics now scattered about among the poorhouses. A similar movement is afoot in England. For the sake of the patient, the State, and civilization, it is most urgent that the legislation authorizing the movement may be speedily enacted, and that other States and all States may adopt this wise and humane method of procedure.

The Lancet Relief Fund.—Every year, in the month of January, the proprietors of the London *Lancet* provide a sum of money of not less than $1500, for the purpose of affording immediate pecuniary assistance to medical men, or their widows and orphans, in cases of distress and emergency, by the grant of money, by way of loans, free of interest, or gifts, as the circumstances may require.

Typhus Fever in New York.—The attention directed to cholera renders the people and the medical profession indifferent to the fatality and danger of other diseases. It is quite true that our country is almost, or quite as much, in danger from typhus as from cholera. There have lately been somewhat more than over 200 cases in New York City. It seems impossible to prevent their continued reappearance, and the disease may soon spread to other cities and States.

CORRESPONDENCE.

THE NEED OF SPECIAL HOSPITALS FOR THE TREATMENT OF TUBERCULOUS PATIENTS.

To the Editor of THE MEDICAL NEWS,

SIR: The onward march of that dread disease, tuberculosis, is not to be wondered at, if we consider the little that is done to prevent or arrest it. Little or no provision has been made in the hospitals for the care and treatment of tuberculous patients. On the contrary, they are received as an unavoidable burden, and are crowded into wards, where they are more or less smothered in their own exhalations and excretions, on the supposition that they will die anyway. In bad weather all are confined to the wards twenty-four hours in the day, and those bedridden necessarily all of the time, and often in wards of which the ventilation is remarkable for its absence or its total inconsistency with ordinary hygienic laws. Moreover, absolute cleanliness is not attainable in wards

or rooms occupied throughout the day and night; but without these, such a place serves as a nidus and an incubator for the propagation and maintenance of disease.

When a physician is consulted by a person of means who has, or fears that he has, pulmonary tuberculosis, what is the usual advice given? After a careful physical exploration and a "sizing up" of the patient generally, in regard to idiosyncrasies, etc., the advice given is change of climate, and a place is usually designated where the pursuit of health and happiness may possibly be succcssful. This prescription given to a person of means can easily be followed, and usually with beneficial results; but in the case of the poor it is quite a different matter. People of moderate means, who are tied down by business cares, and the poor, are thus deprived of the "treatment" which at present is the only one that can be said to exert any distinct influence upon the disease. It is for this class that I wish to enter a plea and to suggest methods by which they may be benefited.

A hospital designed to meet the needs of this class of patients must be especially constructed for that purpose, and should contain day and night wards, so arranged that beds, etc., can readily be transferred from one to the other. The wards should be of medium size, with facilities for admitting floods of light and sunshine. Furthermore, they should be *air-tight*, ventilation being provided for as I shall hereafter describe. This is readily accomplished by laying the floor of tiling in good cement, and covering the walls and ceiling with a good quality of cement. The windows should consist of large plates set in lead frames and cemented in place, and the doors should be provided with rubber packings. The walls and ceilings should be painted with good paint and then varnished. The tiled floor should be laid so as to be higher near the walls and sloping slightly toward the center of the room. A room thus prepared can be rendered absolutely clean and aseptic by flooding it daily with a spray or stream of mercuric chlorid, the walls, ceilings, and floor being then scraped with rubber scrapers and dried with mops. The mercurial solution runs into a tank beneath the floor, where it is allowed to collect, and can be used many times, as its antiseptic qualities, of course, are not diminished.

The ever-increasing cheapness and utility of electricity recommend it as an agent to be used indirectly as well as directly in the treatment of disease, and in the present instance this agency would play an important part in the system of ventilation I am about to describe. We will trace the air from its ingress to its egress. As it is drawn in, the air is forced through a solution to free it of carbon dioxid. It is then rendered warm and aseptic by passing slowly over and among coils of wire rendered incandescent by electricity. It could then be treated as experience would best indicate; that is, it could be rendered dry or moist, charged with additional oxygen or other medication; by passing it through a drying mixture or a spray, medicated or otherwise. A supply motor and fan then forces the air into the ward through numerous openings near the ceilings and from all sides. The air escapes from similar openings near the floor, being drawn out by another motor and fan and is discharged into some antiseptic mixture and allowed to escape. A gentle current is thus maintained in the room from above downward, which would not allow the bacilli-laden dust to rise high enough to be inhaled.

The object of having two motors and fans is to regulate the *pressure* in the ward so as to simulate at will the mountain air, the pressure at sea-level, or in the valley below sea-level. The room being air-tight, any degree of pressure from the lowest to that of two atmospheres can be obtained. The pressure can be regulated automatically by a barometer with electric connections, which can be set at any level. If the pressure becomes too great the barometer, of course, rises, makes the connection to increase the speed of the egress motor, thus drawing out the air more rapidly than it is forced in, and *vice versa*. An electric thermometer controls the temperature automatically in the same way and keeps the wires more or less incandescent, according as the temperature is increased or lowered. The lighting should be by electricity, to avoid the products of the combustion of oils, etc. So much for the mechanical part of the subject. The furnishings should consist of as little as possible and should be of iron, which an occasional mercurial bath would not damage. The bedding should be completely changed daily, washed and wrung out of a 1:1000 mercurial solution, and allowed to dry. The foregoing system, combined with the ordinary therapeutic measures, I am convinced would be the means of saving many lives and relieving much suffering.

This is merely an outline of a system that I would like to see inaugurated in the United States, where the wealth and generosity of its citizens enable such a project to be not only possible but probable, especially when fostered and aided by skilful physicians.

Respectfully, A. T. WEBB, M.D.

87 VIA NAZIONALE, ROME, January 9, 1893.

A "CANCER CURE."

To the Editor of THE MEDICAL NEWS,

SIR: Wood-sorrel (oxalis acetosella), written of in your journal for January 28 (p. 110), is not a new remedy for carcinoma and it has better support than the testimony of old women. It has received professional indorsement, and professional evidence has been presented in its favor. A search through my reference books has been in vain, however, and I call attention to it because others may be more fortunate. My impression is that I saw notices of it in the *Brooklyn Med. Journ.* or *Annals* many years ago. Respectfully, J. C. REEVE.

DAYTON, OHIO.

THE KEELEY SYSTEM.

To the Editor of THE MEDICAL NEWS,

SIR: I was very much interested in an article on alcoholism, by H. Ernest Schmid, published in THE NEWS of January 28. The author seems to have hit upon the essential plan of the Keeley system, that of "operating on the mind and of restoring the dethroned will-power."

As we are located near Dwight, many patients from this city have been there, and from various conversations with them, and after hearing a description of their symptoms while taking the treatment, I have come to the conclusion that the following, obtained from one of

the graduates who had the medicine analyzed, is the secret of the Keeley cure.

Patients on entering the institute are given a mixture containing

℞.—Aurii et sodii chloridi . . .	℥ss
Strychninæ nitrat.	gr. iv.
Atropinæ sulph.	gr. j.
Glycerini	℥ij.
Ex. fl. cinchonæ q. s. . . .	℥xvj—M.

Sig.—One teaspoonful in water three times a day.

The members report four times a day and receive a hypodermatic injection of strychnine nitrate gr. $\frac{1}{60}$. They are told that they can have all the liquor they want. "If you feel like taking a drink," says the doctor, "just ask for it." Mark you now, here is the secret. If the patient asks for a drink of whiskey he gets it; but instead of the injection of strychnine nitrate, he receives one of apomorphine, gr. $\frac{1}{10}$. Of course, the whiskey makes him sick; he is unable to retain his once favorite beverage, and he promptly informs his fellow undergraduates, and writes his friends glowing accounts of the great change and new life that have come over him since taking this wonderful cure, which he feels sure could only have been brought about, as Mr. Keeley himself said in a lecture here recently, by divine appointment.

The reason why Mr. Keeley does not give his secret to the profession is obvious. Respectfully,

J. J. BROWNSON, M.D.

DUBUQUE, IOWA.

MEETINGS OF SOCIETIES.

Copied from the *Medical Standard*, February, 1893.

Association.	President.	Secretary.	Place and time.
NATIONAL.			
American Academy . .	J. E. Emerson, Detroit.	C. McIntyre, Easton, Pa.	Milwaukee, June 5, 1893.
" Andrological . .	E. R. Palmer, Louisville.	J. A. Fordyce, New York.	Harrogate, Tenn., June 20, 1893.
" Climatological .	G. T. Jackson, New York.	G. H. Fox, New York.	Milwaukee, Sept. 5, 1893.
" Gynecological .	T. Parvin, Philadelphia.	H. C. Coe, New York.	Philadelphia, May 12, 1893.
" Laryngological .	C. H. Knight, New York.	M. J. Asch, New York.	New York, May, 1893.
" Medical . .	Hunter McGuire, Richmond, Va.	W. B. Atkinson, Philadelphia.	Milwaukee, June 6, 1893.
" Medico-Psychological	J. Curwen, Warren, Pa.	H. M. Hurd, Baltimore.	Chicago.
" Obstetricians . .	L. S. McMurtry, Louisville, Ky.	W. W. Potter, Buffalo.	Detroit, June 1, 1893.
" Ophthalmological .	S. B. St. John, Hartford, Conn.	H. Derby, Boston.	New London, Conn., July 20.
" Orthopedic . .	J. J. Steele, Louisville, Ky.	J. Ridlon, Chicago.	St. Louis, Sept. 19, 1893.
" Physicians . .	A. L. Loomis, New York.	H. Hun, Albany.	Washington, May 30, 1893.
" Railway Surgeons .	C. W. P. Brock, Richmond,	E. R. Lewis, Kansas City.	Omaha, June, 1893.
" Rhinological . .	E. K. Lewis, Indianapolis.	R. S. Knode, Omaha.	Indianapolis, Oct. 1893.
Mississippi Valley . .	R. S. Sutton.	C. A. L. Fitzpatrick.	Indianapolis, Oct. 12, 1893.
Pan-American Congress .	Wm. Pepper, Philadelphia.	C. A. L. Reed, Cincinnati.	Washington, Sept. 5, 1893.
STATE.			
Alabama	J. T. Searcy, Tuscaloosa.	T. A. Means, Huntsville.	Tuscaloosa, April 8, 1893.
Arkansas	J. T. Jelks, Hot Springs.	L. P. Gibson, Little Rock.	Little Rock, June 2, 1893.
California	W. E. Taylor, San Francisco.	W. W. Kerr, San Francisco.	San Francisco, April 18, 1893.
Colorado	W. E. Wilson, Denver.	H. S. Lobinger, Denver.	Denver, June 15, 1893.
Connecticut	C. B. Newton, Stafford Springs.	N. E. Worden, Bridgeport.	Hartford, May 24, 1893.
Dakota, North . . .	A. P. Rounseveille, Larimore.	D. S. Moore, Jamestown.	Jamestown, May 25, 1893.
Dakota, South . . .	A. L. Peterman, Parker.	R. C. Warne, Mitchell.	Huron, June 4, 1893.
Delaware	E. W. Cooper, Camden.	W. C. Pierce, Wilmington.	Rehoboth, June 13, 1893.
Florida	S. Stringer, Brookville.	J. H. Douglas, Jacksonville.	Jacksonville, April 4, 1893.
Georgia	A. H. Smith, Hawkinsville.	D. H. Howell, Atlanta.	Americus, April 21, 1893.
Illinois	E. F. Ingalls, Chicago.	D W. Graham, Chicago.	Chicago, May 16, 1893.
Indiana	G. F. Beasley, Lafayette.	E. S. Elder, Indianapolis.	Indianapolis, May 9, 1893.
Indian Territory . .	D. Bagley, Vinita.	H. B. Smith, McAlester.	Atoka, June 5, 1893.
Iowa	C. M. Hobby, Iowa City.	C. S. Chase, Waterloo.	Des Moines, May 18, 1893.
Kansas	F. F. Dickman, Fort Scott.	G. C. Purdue, Wichita.	Topeka, May, 1893.
Kentucky	A. Dixon, Henderson.	Steele Bailey, Stanford.	Frankfort, May 3, 1893.
Louisiana	S. E. Archenard, New Orleans.	P B. McCutcheon, New Orleans.	New Orleans, May 9, 1893.
Maine	A. H. Mitchell, Brunswick.	C. D. Smith, Portland.	Portland, June 14, 1893.
Maryland	L. McLane Tiffany, Baltimore.	G. L. Taneyhill, Baltimore.	Baltimore, April 25, 1893.
Massachusetts . . .	J. C. White, Boston.	F. W. Goss, Roxbury.	Boston, June 13, 1893.
Michigan	G. V. Chamberlain, Flint.	C. W. Hitchcock, Detroit.	Muskegon, May 11, 1893.
Minnesota	A. W. Abbott, Minneapolis.	C. B. Wetherle, St. Paul.	Minneapolis, June 21, 1893.
Mississippi	W. Kiger, Vicksburg.	H. H. Haralson, Meridian.	Jackson, April 18, 1893.
Missouri	A. B. Miller, Macon.	F. R. Fry, St. Louis.	Sedalia, June 20, 1893.
Montana	W. Trearcy, Helena.	Dr. Ellis, Butte.	Great Falls, April 19, 1893.
Nebraska	M. L. Hildreth, Lyons.	G. Wilkinson, Omaha.	Nebraska City, May, 1893.
New Hampshire . . .	M. W. Russel, Concord.	G. P. Conn, Concord.	Concord, June 20, 1893.
New Jersey	G. T. Welsh, Passaic.	W. Pierson, Orange.	Spring Lake, June, 1893.
New York Association .	S. W. McLeod, New York.	E. D. Ferguson, Troy.	New York, Oct. 19, 1893.
North Carolina . . .	J. W. McNeill, Fayetteville.	R. B. Jewett, Wilmington.	Wilmington, May 7, 1893.
Ohio	D. P. Allen, Cleveland.	T. V. Fitzpatrick, Cincinnati.	Put-in-Bay.
Pennsylvania . . .	H. L. Orth, Harrisburg.	W. B. Atkinson, Philadelphia.	Williamsport, May 16, 1893.
Rhode Island . . .	W. H. Palmer, Providence.	W. R. White, Providence.	Providence, June 2, 1893.
South Carolina . . .	W. H. Narlen, Anderson.	W. P. Porcher, Charleston.	Sumter, April 3, 1893.
Tennessee	C. W. Beaumont, Clarksville.	D. E. Nelson, Chattanooga.	Nashville, April 11, 1893.
Texas	J. W. Osborne, Cleburne.	H. A. Weston, Galveston.	Galveston, May 2, 1893.
Vermont	J. W. Jenne, St. Louis.	D. C. Hawley, Burlington.	Montpelier, Oct. 14, 1893.
Virginia	H. M. Nash, Norfolk.	L. B. Edwards, Richmond.	Charlottesville, Oct. 1893.
West Virginia . . .	D. P. Morgan, Clarksburg.	D. Mayer, Charlestown.	Parkersburg, June, 1893.
Wisconsin	B. T. Phillips, Menominee.	C. S. Sheldon, Madison.	Milwaukee, May 3, 1893.

THE MEDICAL NEWS.

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VOL. LXII. SATURDAY, FEBRUARY 18, 1893. No. 7.

ORIGINAL ARTICLES.

A RÉSUMÉ OF SOME MODERN METHODS OF THE DIAGNOSIS OF DISEASES OF THE STOMACH.

BY D. D. STEWART, M.D.,
CLINICAL LECTURER ON MEDICINE IN JEFFERSON MEDICAL COLLEGE, PHILADELPHIA.

THERE is in medicine no subject the study of which can be approached with a livelier degree of interest and satisfaction by the clinician than that of diseases of the stomach. Under modern methods of research, these ailments offer an extended range for profitable inquiry, and a scope, the result of exploration, which is not alone of interest to the investigator, as is unfortunately often the case with the familiar organic affections of certain other organs —such, for example, as those of the nervous system. These, though of absorbing satisfaction to follow through their intricacies of diagnosis, are—and probably ever will be—almost a barren field to the therapeutist. The end for which we gain our knowledge—the cure of disease—is in affections of the stomach less hampered by "the old and inevitable antagonism between pathology and therapeutics"[1] than in ailments of any other viscus.

Recent diagnostic methods, aided by the teaching of the laboratory, not only often enable us to arrive at the nature of the disorder with an astonishing degree of exactness, and to formulate a therapy most successful in result, but they also render it as unnecessary as it is impossible to wait for post-mortem revelations as to the nature of the pathologic process. In diseases of the stomach, in which the workings of a disordered viscus can be studied and compared with the normal, we are enabled to learn so much regarding the pathology of curable diseases, that the reproach, often just, that modern scientific medicine has the tendency to create a greater interest in the study of a disorder than is taken in the patient's well-being, cannot hold here.

The diagnostic methods of inspection, palpation, and percussion, applied to the study of stomach diseases, need not be here detailed, their general application being understood. Regarding palpation, two points, upon which especial stress should be laid, may be noted in passing: (1) that it should always be performed with the hand placed horizontally upon the abdominal wall, and never with it held perpendicularly or obliquely; and (2) that when palpation in dorsal recumbency is resultless, an examination in the knee-elbow and lateral position should not be omitted. It is often necessary that these external methods of examination should be conducted under artificial distention of the stomach, either alone or, conjointly, of the large bowel, with gas or water—or, when the combined method is used, one viscus may be distended with gas, the other with water.

The stomach, more especially its inferior margin, may be outlined when empty and the patient erect, by first noting the lower line of tympanitic note its percussion evokes, if it be possible to thus differentiate transverse colon and stomach. A pint or more of water is now introduced, and if necessary the colon distended with air by a hand-ball syringe, or by the inverted siphon of a bottle of carbonated water. The method of Dehio, a modification of this, is of still greater utility. About a quart of water is introduced in separate quantities of a half-pint each, and after the ingestion of each portion, the lower crescentic limit of flatness against the tympanitic transverse colon is outlined. In the erect posture, though the normal stomach descends somewhat with the increased amount of fluid introduced, it will not quite reach the level of the umbilicus. In cases of relaxed muscularis the descent is more rapid, and in pronounced ectasia and in gastroptosis the stomach is already abnormally low before the introduction of fluid. Another method employed is, with the patient recumbent, to distend the colon with water and the empty stomach with gas, either by generating it *in situ* by the administration separately of the acid and alkaline portions of one or two Seidlitz powders[1] in concentrated solution, or by the introduction of air through a stomach-tube by an ordinary enema-syringe. The former is a more rapid method of obtaining distention, but often not quite so satisfactory in result when applied in cases of decided gastrectasia.

Among the newer methods of exploration must be mentioned gastrodiaphany of Einhorn.[2] With this, valuable aid may be obtained in outlining the

[1] Gowers: Syphilis and the Nervous System.

[1] A teaspoonful or two of sodium bicarbonate and about two-thirds this quantity of tartaric acid may be used to replace the Seidlitz powder.

[2] See the New Yorker med. Monatsch., November, 1889; the New York Med. Journ., December 3, 1892.

size, situation of the stomach, and, in certain cases, the condition of the anterior gastric wall. Einhorn's gastrodiaphane, made by Reynder & Co., of New York, consists of a soft stomach-tube, at the gastric extremity of which is placed an Edison's hard-glass lamp, from which conducting wires, containing a current-interrupter, run to a portable storage-battery. This apparatus, which is really very practicable, is as easy of introduction and manipulation as the ordinary stomach-tube. In its application the stomach should be free from food and moderately distended with water.[1] When considerable faucial irritability exists a cocaine solution should be first applied to the throat.[2] The stomach extremity of the gastrodiaphane, after being lubricated with oil or glycerin, is guided over and past the epiglottis by the index-finger of the left hand, much as a hard tube is introduced. After its passage, the circuit is closed. If no pronounced thickening of the anterior stomach-wall exists, trans-illumination in a dark room, with the patient erect, permits the outlines of the stomach to be seen as a zone of reddish hue on the abdominal wall.

The actual utility of gastrodiaphany over other methods of outlining the stomach lies especially in the application of the diaphanoscope to the differentiation of gastroptosis from gastrectasia, as by it the determination of the site of the lesser curvature is far more readily made than by inflation. It also is of real value in diagnosticating tumors or thickening of the anterior wall of the stomach, the presence of these interfering with trans-illumination.[3]

The most notable of the advances made in the diagnosis and treatment of diseases of the stomach dates from the application of the stomach-tube to diagnostic purposes by Leube, in 1871, and the subsequent introduction of the soft tube by Ewald, for similar uses. An insight was thus obtained better than ever before as to the gastric chemism, and extraordinary opportunity given not only to study its derangements in various phases, but for experimental research leading to a rational therapy. The time has now, indeed, arrived in which it may be not rashly asserted that one might as readily attempt to diagnosticate a grave kidney-derangement without an examination of the urine, as some of the common gastric ailments, without at least a cursory study of the secretory condition of the diseased stomach. Beyond doubt, less hazard will result from such empiricism applied to the management of derangements of the kidney than to that of those of the stomach, the constant disorder of which may be regarded as *fons et origo* of many of the chronic ills that appear with increasing years. Fortunately, the use of the tube for diagnostic purposes, and the subsequent examination of the removed stomach-contents, require so little special skill that these are the reach of even the medical tyro.

The best form of stomach-tube is that of Ewald. This is of moderately soft red rubber, of open and somewhat tapering tip. It has in the lateral walls one large fenestra, and a number of smaller ones.[1]

The tube of Ewald, as sold, is of insufficient length for lavage. When used for this purpose, a second portion of gum tubing must be joined by the interposition of a small section of glass piping. For a mere removal of the stomach-contents the length is ample without the second piece of tube, except in cases of gastrectasis.

So important an adjuvant to diagnosis and treatment is the tube, that I consider it almost impossible to do justice to a case of pronounced chronic gastric disorder without a resort to it in some stage of the disease. So helpful is it in arriving at a correct diagnosis, and in directing the therapy, apart from its utility for lavage, that the earlier a patient can become habituated to its employment the better. I now rarely treat a case without it, and as rarely encounter one that will not willingly consent to its use for diagnostic purposes and treatment, when its utility is explained. But a few introductions of the tube are required—the throat cocainized[2] at first, if necessary, and the intervals not too

[1] Einhorn advises from one-half to one pint. Heryng and Reichmann (Therapeutische Monatshefte, March, 1892), who have recently investigated gastrodiaphany with a special apparatus of their own, find that the most satisfactory results are obtained when the stomach is *filled* with water. They use, according to the degree of dilatation, from 500 to 2000 c.cm. My own experiments with Einhorn's gastrodiaphane have given me much better results when the stomach was distended with water.

[2] As it is usual to examine the gastric contents in cases in which diaphanoscopy is indicated, the patient has probably become somewhat accustomed to the application of the soft tube. This I regard desirable when it can be arranged, as nervousness and gastric irritability will not then disturb the examination.

[3] Einhorn relates a case of probable diffuse carcinoma, in which the diagnosis was so established.

[1] The inner edge of the large opening in the lateral wall should be bevelled. Even with the 11 mm. tube, the full size, I often have had difficulty in removing the stomach-contents after a general meal, in which imperfect solution of the food has occurred. Large portions of mucus alone will sometimes block both the tip and lateral fenestræ. Cheaper, softer tubes than Ewald's are generally sold in this country. These are of red rubber, about 60 inches in length. They have an open tip, and a fenestra in the lateral wall. Their other extremity is made funnel-shaped.

[2] A small quantity of a low percentage of cocaine (about 3 to 4) is projected with a medicine-dropper upon the posterior pharyngeal wall, shortly before the tube is passed. I always make use of cocaine in this way, especially in women, the first two or three times. Subsequently cocaine may be dispensed with. The gummy smell of the tube, after introduction, is offensive to some, and may in itself produce nausea. A few drops of mentholated oil snuffed into the nostrils disguises this. After a few introductions the odor is no longer objectionable. After cocainizing the throat the stomach extremity of the tube is rapidly

lengthy—before the patient will most readily manipulate it totally without inconvenience, and always, in selected cases, with benefit.

The stomach-contents are more readily removed with less disturbance to the patient by aspiration than by the expression method of Ewald, now commonly recommended. The latter is often difficult of successful application in uneducated cases, and is, moreover, annoying to the patient. Frequently, also, by it the entire stomach-contents cannot be removed, so necessary for a complete examination when a small meal, such as a trial-breakfast, has been taken. There is also likelihood of a reflux from the duodenum of alkaline juices in cases of relaxed pylorus, when straining efforts of evacuation are made, besides the actual danger of hemorrhage in cases of unsuspected ulcer. I now invariably use for aspiration a simple apparatus, which can be readily made by anyone. It consists of a wide-mouth bottle of moderate capacity, with a rubber stopper containing two perforations, holding glass tubes, the outer extremities of which are bent at a right angle; to these are attached the stomach-sound and a simple rubber bulb, or, preferably to the last, an ordinary enema syringe, minus its metal or hard-rubber extremity. With the bulb or syringe a rapid exhaust of air in the bottle is produced, the latter being held below the stomach-level. A prompt inflow of gastric contents then usually promptly occurs without gastric disturbance. Should the flow not occur promptly, or, having begun, have ceased, the intra-gastric extremity of the tube being at the fundus, the exhaust syringe should be reversed, and several bulbfuls of air pumped into the stomach. Thus, any food particles or masses of mucus which may have blocked the fenestræ will be dislodged. The syringe is then reversed and the aspiration completed. The bottle, stopped with an ordinary cork, serves to transport the stomach-contents, should the aspiration have been done away from the place of examination.

Many and careful studies of the gastric secretory function during fasting and in various periods of digestion, first undertaken by Ewald and Boas, and subsequently pursued by many others, with results in the main confirmatory of those obtained by the former, have shown that normally during fasting the stomach contains no digestive secretion;[1] and that after food, certain definite stages of digestion occur, during which, with very similar quantity and character of aliment, similar intra-gastric conditions will be encountered, and that if broad deviations occur from these an abnormality is indicated. A variety of trial-meals have been suggested to ascertain this, such as Ewald's, Leube and Riegel's, Reichmann's, and Jaworski's,[1] any one of which resorted to, must invariably be ingested on an empty stomach. Whichever is selected, it is desirable that that one only should be habitually used, as different varieties and quantities of food do not stimulate the secretory function equally.

The stomach-contents should be removed at a time when digestion is normally at its height, which occurs after Ewald's breakfast in from three-quarters of an hour to one hour; after Riegel's meal in from three to five hours, and in about one and a half hours after Reichmann's.

During the early stage of the digestive phase the acidity of the gastric contents is feeble, due to acid salts of the ingesta, and to lactic acid, the latter derived either from the lactates in the food or from fermentation of carbohydrates. In this stage, varying from twenty minutes to two or more hours, depending upon the amount and character of the ingesta, saccharification of starch, begun in the mouth, occurs, and continues so long as the acidity due to organic acids and acid phosphates remains at a minimum. The second stage is characterized by the appearance of uncombined HCl, after complete saturation by the latter of organic bases and albuminoids.[2] Free HCl now gradually increases in amount until the normal percentage—0.15 to 0.3[3]—is reached, while lactic acid and acid salts coincidently diminish, and finally disappear,

passed toward the pharynx, the patient being directed to swallow as it engages in the latter. With one or two efforts at deglutition the tube can then usually be pushed rapidly onward until it reaches the stomach's fundus. It is unnecessary to introduce the finger into the mouth in passing the soft tube, guidance past the epiglottis not being required. The whole maneuver, introduction of tube and siphonage, can be accomplished usually in a few seconds.

[1] Apparent exceptions to this exist only in those in whom manipulation excites a flow of gastric juice, or, in cases of hypersecretion, in which, during fasting, the stomach often contains more or less gastric juice, the acidity of which is often higher than that of the normal.

[1] That in common use is Ewald's, consisting of a well-cooked stale roll (or 35 to 70 grams of stale white bread), without butter, and 300 c.cm. of water, or an equal quantity of weak tea without milk or sugar.

Leube and Riegel's dinner, of which the other trial-meals are modifications, consists of 400 c.cm. of soup; 60 or more grams of scraped beef; 50 grams of white bread, and 200 c.cm. of water. It is less convenient of administration than Ewald's, and is likely to be much more difficult of removal than the others, when digestion is retarded.

Reichmann's breakfast consists of 30 grams of meat-powder; 2 grams of salt; 200 c.cm. water, and one wheaten roll.

Jaworski uses the whites of two hard-boiled eggs, and 100 c.cm. of water.

[2] By free HCl is meant that not united as a salt with the organic bases of the ingesta, or loosely combined with the albuminoids. The latter represents the bound or united HCl, not detectable by qualitative tests. See my paper in Hare's System of Therapeutics, vol. ii, p. 890.

[3] 0.3 per cent. of free HCl is often present physiologically at the height of digestion of a full meal.

except in traces too minute to be appreciable by ordinary tests.

After a light meal, such as Ewald's trial-breakfast, the reaction for free HCl is usually manifest to ordinary tests in from twenty to forty-five minutes, and at the latter period in the percentage stated. At the height of digestion of a more varied meal the percentage of free HCl may be even greater than this normally; and contrarily, in diseased conditions may also be much less, depending upon the readiness with which the secretory function responds to increased stimulation. The reaction for starch is then normally absent, but that for erythrodextrin and grape-sugar is decided. Tests for ordinary albumin also result negatively, while, contrary to what is ordinarily regarded as the rule, there is an abundance of proteoses, but traces only of peptone, if present at all. The formation of abundant proteoses (albumoses) indicates sufficiently the presence of pepsin, while the existence of lab-ferment is evinced by the ability of the filtrate of the removed contents to solidify milk.

A systematic examination of the gastric secretion is best conducted as follows:[1] The stomach-contents, removed at the time already specified, are carefully inspected as to the presence of blood, bile, mucus, and evidences of solution of food. It is now subjected to thorough agitation in a small vial, preceding filtration, if the latter is practised, as it has been ascertained that different portions of the filtrate are sometimes of varying acidity.[2] Examination should be made as early as possible after removal of the contents, that further digestion or fermentative processes may not ensue, perhaps resulting in disappearance of the free HCl present.

The acidity is first ascertained by litmus or Congo paper.[3] Congo paper may be first used, since, because of its reacting to free acids and abnormal amounts of acid salts, rendering blue or violet the former and weakly browning the latter, a positive response obviates the use of litmus, and often gives valuable preliminary testimony.

The total acidity—that due to free acids and acid salts—is now determined. Ten c.cm. of the stomach-contents are titrated with a deci-normal solution of sodium hydrate,[1] a drop or two of a weak alcoholic solution of phenol-phthalein being first added as the indicator. A persistent, very faint red tinge shows neutralization. The total acidity is calculated on 100 c.cm. of stomach-contents. One hour after Ewald's trial-breakfast this should be between 20 and 60, equaling an acidity which, if due to HCl alone, would represent 0.07 and 0.21 per cent.

The presence of acid salts or free acids, may be determined by Congo paper as already stated, but, more delicately, by Leo's $CaCO_3$ test. A few drops of the filtrate are thoroughly mixed in a watch-glass with a little dry powdered $CaCO_3$ (C. P.).[2] After complete neutralization of the free acids of the filtrate, and disappearance of dissociated CO_2, the reaction is taken with blue litmus paper and carefully compared with that of the original unneutralized filtrate. A simple *lessening* of red coloration shows the presence of both free acids and acid salts. Its total disappearance indicates positive absence of acid salts.

In examining for free HCl only those tests should be employed which respond to a mineral acid. For this reason Congo, methyl-violet, benzo-purpurin, 6 B., tropeolin (00), and other similar color reagents and combinations are not to be preferred to Günzburg's or Boas's[3] solution. Of these last, Günzburg's solution is a trifle more delicate; and as it may also be employed for the quantitative

[1] Lack of space prevents the subject being here considered other than in outline. It is, however, sufficiently detailed for practical clinical purposes.

[2] See "Die Magensaüre des Menschen," Martius and Lüttke. For this reason it is advisable to make quantitative examination for HCl and for the acidity, without filtration. When filtration is practised, thorough agitation should first be made. I have recently applied the centrifugal machine used for prompt separation of precipitates in urine, for quickly obtaining the fluid portion of the stomach-contents, after thorough shaking to insure an equable mixture.

[3] Congo paper is more convenient for use than Congo solution, though also much less delicate in response to free acids. Of the solution, a droplet added to a drop or so of the gastric filtrate, develops a violet or blue coloration depending upon the amount of free acid present—violet, if a minimum. 0.001 HCl and 0.002 lactic acid in *aqueous* solution are thus shown with certainty. With Congo paper but 0.01 HCl and 0.03 lactic acid respond to similar solution. See Leo: Diagnostik der Krankheiten der Verdauungsorgane, p. 92.

[1] $\frac{N}{10}$ NaHO = 4 grams NaHO dissolved in 1000 c.cm. distilled water. Each c.cm. of this solution exactly neutralizes 0.0036 grams absolute HCl. The number of c.cms. consumed in the titration, multiplied by 0.0036, would represent the percentage of HCl contained in 100 c.cm. of the gastric filtrate, if the only acid present were HCl. The titrating solution is slowly dropped, with constant stirring, from a burette graduated in one-tenths of c.cm.

[2] $CaCO_3$ in cold solution neutralizes free acids only, not reacting with acid salts. This test is very delicate. Its application, after removal of fatty acids by heat, and lactic acid by agitation with ether, is the most certain and sensitive test known for free HCl. According to Leo, 0.002 per cent. of the latter may be detected by it if decided amounts of acid phosphates are not present; even then 0.008 per cent. HCl may be shown with exactness.

[3] Günzburg's solution spoils more readily than Boas's. It should be prepared only in small quantities, and kept in a black, tightly-stopped bottle. Boas's solution consists of re-sublimed resorcin (5), sugar (3), dilute alcohol (100). Its application is identical with that of Günzburg's. Should response to Congo paper not occur, it may be necessary to gently evaporate several drops of the filtrate to obtain a reaction with these tests, and then but a fleeting red at the circumference may be produced, denoting minute traces only of free HCl. For percentage of delicacy of response of these tests and interference therewith in other solutions than aqueous, see my paper, Hare's System of Therapeutics, ii, pp. 897, 898; and Leo, loc. cit., p. 93 et seq.

determination of free HCl (Mintz method) it is to be selected. Günzburg's solution consists of 1 part of vanillin, 2 of phloroglucin, and 30 of absolute alcohol. One or two drops of the gastric filtrate, with one of the test-reagents, are gently heated over an alcohol or Bunsen flame on a porcelain dish. On slight evaporation, a delicate rose-red tinge appears at the margin of the liquid, and promptly becomes of an intense cherry-red, depositing minute crystals of a similar color in the presence of decided amounts of free HCl. With the usual percentage of free HCl present, one drop of gastric filtrate may be diluted upward of fifteen times, and yet a drop of this dilution will be found to respond to freshly made Günzburg's solution.

Freshly prepared Günzburg's solution forms an easily applied quantitative test (Mintz's)[1] for free HCl which is sufficiently exact for clinical purposes. Ten c.cm of the filtered or unfiltered stomach-contents are carefully titrated with deci-normal soda solution from a burette until a response no longer occurs with Günzburg's reagent. With the addition of each $\frac{1}{10}$ c.cm. or fraction thereof, depending upon the amount of free HCl suspected to be present, a drop or two of the partly neutralized contents is tested with Günzburg's solution.[2] The limit of the Günzburg's reaction being approximately 0.036 pro mille of HCl, an estimation of the percentage of free HCl is made by the multiplication of the number of c.cm. and fraction thereof at which the response just ceases, by 0.0036.

Examination for organic acids—lactic and fatty.[3] —Lactic acid is detected by the addition of a few drops of the gastric filtrate to Uffelmann's carbolated ferric chlorid solution,[4] or to a very dilute solution of ferric chlorid[5] alone, in a test-tube; the amethyst-blue color of the former solution is at once transformed into a yellow, and the light, almost colorless, yellow of the latter will be intensified in the presence of traces of lactic acid. Unfortunately, glucose, acid salts, and lactates also respond to the carbolated ferric chlorid test, and lactates and peptone to its modification, the ferric chlorid. A positive reaction occurring, therefore, a second step is necessary. A small quantity of the filtrate—about a dram—should be thoroughly agitated in a test-tube or separating funnel with about three or four times this amount of neutral ether. When great delicacy of result is especially desirable, as in removing all traces of lactic acid prior to testing for free HCl by calcium carbonate, several fresh portions of ether should be used. The ether is on each occasion removed by a pipette, if a separating funnel has not been employed for agitation. It is subsequently evaporated on a capacious watch-glass or porcelain dish, on a water-bath or in the air, and an aqueous solution of the ethereal extract tested by Uffelman's solution, which with these precautions becomes the most delicate reagent for the detection of lactic acid.

The fatty acids may be very simply detected by heating to the boiling-point a few c.cm. of the filtrate in a test-tube, over the mouth of which is suspended a strip of moistened neutral or blue litmus paper. Traces of these acids may be thus recognized.

The presence of free HCl indicates, beyond doubt, also the presence of pepsin. In the absence of response to tests for the former, the presence of the milk-curdling ferment also signifies the existence of pepsin. Response to the digestive test is also a certain indication of the secretion of both pepsin and HCl. A small disc of hard-boiled white of egg, or a similar quantity of purified blood-fibrin[1] is placed in one or two drams of the filtrate in an incubator maintained at a temperature of about 100° F. The albumen should be dissolved in from one to three hours, if pepsin and the normal percentage of HCl are present. If absence of or a deficiency in HCl exists, this acid should be added until, roughly, a percentage of from 0.1 to 0.3 is reached.

The presence of proteoses (albumoses or propeptones) also indicates the presence of peptone, for, although HCl alone apparently possesses the power to form a small amount of proto-albumose as well as syntonin, its secretion without the coincident appearance of pepsin seems impossible.

Until recently it was thought that peptone was formed in abundance in the stomach, as a result of pepsin-HCl digestion, and that this, indeed, was the true end-product of the same. The researches

[1] Mintz: Wiener klin. Woch., 1889, No. 20; 1891, No. 9; and Martius and Lüttke's Die Magensaüre des Menschen, pp. 90, 91.

[2] If Mintz's test is applied after the total acidity is reckoned, and an account has been taken of organic acids and acid salts, an approximate idea may be formed of the quantity of soda solution required, so that too frequent repetition of application of Gunzburg's test may be avoided during titration. If, however, only a small quantity of stomach-contents is obtainable, the test may be at once applied in the manner directed to the 10 c.cm. from which the total acidity is calculated, great care being then observed in the addition of the neutralizing solution.

[3] Space does not here permit detail of methods for estimating both the combined and free HCl, less necessary of calculation than the latter alone. Unfortunately, of the many proposed and in use, none is without elements of fallacy; those that are regarded as freest from error, and which I usually employ, are Salkowski's modification of Sjöqvist's method (Zeitschrift f. physiolog. Chem., 1888; Bd. 13) and Leo's (see his Diagnostik, etc. or Martius and Lüttke's Magensaüre).

[4] A dilute solution of neutral iron chlorid containing a drop of carbolic acid.

[5] So dilute as to be almost colorless. For comparison of result, a second test-tube is filled with a similar solution to which an equal quantity of water is added, as of filtrate to the first. The colors of the two are carefully compared.

[1] Blood-clot is repeatedly washed until all trace of blood-coloration is removed. It is then preserved in glycerin, which latter is first removed from the test-portion used, by repeated washings.

of Kühne and Chittenden[1] tend to indicate that this is not the case; that but a minimum amount of true peptone is actually formed even through the long-continued action of pepsin-acid.[2] Bodies intermediate between syntonin and peptone seem to be largely the actual final product of peptic digestion, if one may judge by the relative amount of these and of peptone formed. The proteoses or albumoses are at least three, pro-albumose, hetero-albumose, and deutero-albumose; each of which in the order named progressingly approaches peptone. After neutralization of the acid filtrate, which precipitates syntonin or acid-albumin, and the removal of the latter, it had been thought, until Kühne and Chittenden's observations showed the contrary, that the primary products of digestion could be removed by the addition of sodium chlorid and strong acetic acid. Recently these experimenters ascertained that at least deutero-albumose is not thus precipitated, and that even proto-albumose and hetero-albumose are incompletely precipitated unless the sodium chlorid be present to saturation—so that the body termed "peptone" in the past has been variously deutero-proteose alone or a mixture of the proteoses, or of proteoses and peptone.

At the height of normal gastric digestion, one hour after Ewald's trial-breakfast, little or no cloudiness should occur on boiling and on neutralization of the gastric filtrate, showing absence of undigested albumin and of syntonin. These, if present, are removed by filtration. The colorless filtrate may then be at once acted upon by *neutral* ammonium sulphate, which in hot saturated solution almost entirely removes all traces of the proteoses; or, the filtrate may be first treated with cold saturated solution of sodium chlorid and strong acetic acid, which precipitates proto-albumose and hetero-albumose. Finally, deutero-albumose and traces of the other albumoses remaining may be precipitated by saturating the neutralized filtrate while hot with ammonium sulphate. The resulting ammonium sulphate filtrate should then be examined for peptone by the biuret test.[3]

In a considerable number of tests for peptone so applied, at the height of gastric digestion, my experiments are confirmatory of the test-tube experiments of Kühne and Chittenden. I have, indeed, rarely found more than traces of peptone, and frequently have been unable to obtain the biuret reaction in subjects in whom the digestive secretion otherwise responded normally. In these, proteoses were present in abundance, with no traces of undigested albumin and but little syntonin.

The presence of the milk-curdling ferment—an enzyme apart from pepsin and not related to HCl[1]—is readily ascertained by the addition of a few drops of gastric filtrate to about a dram of unboiled milk; this placed in a warm chamber solidifies in from a few minutes to an hour.[2]

Starch is readily detected in the stomach-contents by the blue coloration resulting when the filtrate is tested with Lugol's solution. The presence of erythrodextrin, a primary stage in the conversion of starch into maltose, is shown by a purple or brown hue developed. Achrodextrose, maltose, and dextrose, more advanced stages of the hydrolysis of starch, do not react to solutions of iodine. It is useless to test for grape-sugar, as this preëxists in the roll eaten.

The estimation of the propulsive functions of the stomach is of great diagnostic, prognostic, and therapeutic importance. It is most conveniently tested by salol, the method of Ewald and Sievers. This method furnishes fairly accurate results and is readily applied,[3] unlike the method, proposed by Klemperer, with oil. It is, however, unfortunate that hyperacidity due to increased secretion of HCl, which often occasions and accompanies gastric hypermotility, may cause delay in the intestinal decomposition of salol, and thus mislead, the result of the test suggesting the reverse condition—hypotony. Therefore, in instances of hyperacidity with delay in salicyluric acid response, in which a study of the propulsive function is of importance, Leube's method also should be tried—that of washing out the stomach and inspecting the removed contents for food elements from six to seven hours after a trial-dinner, or two hours and a half after Ewald's trial-breakfast, at the expiration

[1] See Chittenden: "On the Relative Formation of Proteoses and Peptones in Gastric Digestion." Journ. of Phys., vol. xii, No. 1.

[2] Unlike what occurs in consequence of pancreatic digestion of albuminoids, as a result of which peptone is readily formed without the intermediate albumose stages.

[3] The filtrate should be treated with a sufficient quantity of a strong potasium hydrate solution to decompose all ammonium sulphate present (see Chittenden, loc. cit.). Succeeding this, a drop or two of a very weak cupric sulphate solution should be added. The presence of peptone is shown by a purple-red color, varying to bluish-violet, depending upon the amount present.

[1] The characteristic solidification of milk under the action of the ferment rennin must not be confounded with the fine, flaky coagula resulting from acids.

[2] Should coagulation not occur at the expiration of the specified time, rennin is probably absent, though its pro-enzyme, lab-zymogen, may not be. A small quantity of concentrated solution of $CaCl_2$ is added to the mixture, which is again placed in a warm chamber. Solidification now resulting indicates the existence of lab-zymogen, which, through the action of the $CaCl_2$ added, generating HCl, is transformed into the active ferment.

[3] Fifteen grains of salol in water are administered shortly after an ordinary meal. The urine is tested for salicyluric acid, beginning half an hour after the ingestion of the dose, and continued at intervals of from fifteen to twenty minutes, until response occurs. A simple method is to moisten strips of filter paper with a few drops of urine, touching the moistened spot with a few drops of a 10 per cent. solution of iron chlorid. A violet color indicates the presence of even traces of salicyluric acid. This reaction occurs normally in from forty to seventy-five minutes.

of which period the stomach should be empty. The condition of the absorbent function of the stomach, of much less importance than the propulsive or secretory, is ascertained by the method of Penzoldt and Faber. Two or three grains of potassium iodid, inclosed in a gelatin capsule, the exterior of which must contain no traces of the salt, are ingested with a little water, on an empty stomach.[1] Normally, rapid absorption of the iodid from the stomach occurs, iodine being detected in the saliva in from six to fifteen minutes. Strips of starch-paper[2] are moistened with the saliva and then a drop of fuming nitric acid is added to the moistened spot —a bluish coloration shows the presence of iodine.

Of the three gastric functions the trend of opinion recently is toward regarding the propulsive as the most important. Diminution in it, however perfect the gastric chemism, is likely to lead to impaired nutrition and secondary secretory disturbance far more promptly and more frequently than is a mere diminution in chemism to affect gastric motility. The chief function of gastric digestion is that of peptonization of proteids, and yet, as has just been stated, true soluble diffusible peptone is, under the most favorable circumstances, formed to a very limited extent in the stomach, bodies intermediate between it and acid-albumin being largely the end-products of pepsin-HCl digestion. These are but slightly absorbable, dialyzing and diffusing with difficulty. Subsequently, through tryptic digestion, the proteoses are converted into soluble peptone. Carbohydrates, save that portion acted upon by the saliva and fats, are also subject to intestinal digestion. Milk is coagulated and subsequently partly peptonized in the stomach; but since a milk-curdling ferment is also secreted by the pancreas, the stomach may be said to possess no digestive function not existing in the pancreatic juice.

Proteolysis, the chief digestive function of the stomach, is so much more efficiently performed by the pancreatic juice, which also readily digests starches and fats, that the gastric secretory functions may be in entire abeyance for long periods, and almost perfect bodily nutrition maintained by duodenal digestion, provided the gastric motility remains normal. It must, however, be borne in mind that derangement of the secretory apparatus tends, as a rule, if prolonged, to lead to atony of the stomach, and this eventually to a catarrhal condition which may eventuate in atrophy of the gastric tubules. In this condition degeneration of the gastric muscle is likely to occur.[3]

[1] For more detailed account of estimating gastric motility see my paper in Hare's System of Therapeutics, vol. ii, p. 900 et seq.

[2] Filter-paper saturated with starch paste, and dried.

[3] Cases of this sort are not uncommon, though few have been reported, except in Germany. I have had one—a woman—under observation for a year and a half. Einhorn (Med. Record, June 11, 1892) reports four cases of so-called atrophy of the stomach—but for which he suggests the term *achylia gastrica*—under his notice for several years. Three of these remain well nourished. One is a robust male, aged forty years, in whom Einhorn believes the anacidity has probably existed from earliest youth.

The various disorders affecting the stomach are characterized by an alteration in one or all of the functions, the recognition of the condition of which has just been considered. Derangement of gastric chemism is the most common. The secretory alteration consists especially in either diminution or increase in the most important of the constituents of the gastric juice—hydrochloric acid. Diminution is usually accompanied by a lessening in the production of pepsin and rennet ferment, though these latter or their pro-enzymes[1] are never habitually absent from the gastric secretion, except in advanced atrophy of the mucosa, in which condition the secretory function is, of course, totally in abeyance. Unlike the case with secretion of pepsin and rennet ferment, free HCl may be completely unrecognizable in various affections, such as carcinoma of the stomach,[2] and less often, though more frequently than is commonly supposed, in certain gastric disorders depending upon a neurosis and of reflex origin.

Diminution or even absence of HCl in the stomach sometimes occurs solely as a neurosis, in the hysterical and neurasthenic, and as a reflex gastric disturbance in many uterine disorders and during menstruation. Cases are also rarely encountered in which, with presumably a normal mucosa, and without evidences of ailments affecting the stomach reflexly, in which free HCl is much diminished or absent. Diminution in secretion of HCl also attends all acute febrile conditions, acute or chronic gastric catarrh,[3] whether primary or secondary to heart, lung, or other visceral disease, or to gastric dilatation.

[1] Pepsin and rennin probably do not exist in the secreting cells as active ferments, but as pro-enzymes, which are subsequently converted into the former by the action of certain substances, such as common salt and HCl.

[2] Absence of free HCl in carcinoma of the stomach results from disturbance in the secretory function, originated in all probability by an accompanying gastritis, leading to generalized atrophy of the mucosa. Rarely, free HCl persists until death, despite the presence of carcinoma, and very exceptionally, especially in carcinoma originating from ulcer, free HCl is present in excess. In these cases the gastric mucous membrane, except in the immediate vicinity of the cancer, has been found normal, *post-mortem*.

[3] An apparent exception exists in cases of hypersecretion of HCl, in which a catarrhal condition of the mucosa may be produced by irritation of the highly acid gastric juice. This continuing, chronic gastritis with subacidity ultimately results. Occasionally, also, in cases of simple mucous catarrh in which probably no structural alteration in the specific secretory epithelium has yet eventuated, periods of plus secretion in HCl replace diminution in the same. This last, though contrary to the teaching of Ewald, is based on positive evidence in cases that I have carefully studied.

Diminution in, or absence of, secretion of HCl is often accompanied by the presence of large amounts of organic acids and acid salts in the stomach; especially is this the case if lessened gastric motility permits undue retention of food; so that in chronic gastric catarrh and in gastrectasia, however arising, these acids are usually found in abundance at a stage of digestion in which free HCl should be the only acid detectable by tests commonly employed.

Hyperacidity of the stomach may be due to the undue presence of organic acids arising through fermentation of food. This condition is often encountered in gastric catarrh, dilatation, and carcinoma. Hyperacidity more commonly occurs as a neurosis, it being then due to the presence of an excessive amount of free HCl, in which condition organic acids are at a minimum. Hyper-HCl production may or may not be accompanied by hypersecretion. When the latter is present, many ounces of an active digestive fluid may be obtained from the fasting stomach, even when little or no manipulation has been used in its extraction. Hypersecretion of gastric juice may or may not be accompanied by hyperacidity, though it usually is. It occurs either continuously, in which condition many ounces may be obtained from the fasting stomach, or periodically, and then especially after the ingestion of food.

SYMPHYSIOTOMY VERSUS ITS SUBSTITUTES; WITH THE REPORT OF A CASE OF SYMPHYSIOTOMY.[1]

BY CHARLES P. NOBLE, M.D.,
SURGEON-IN-CHIEF, KENSINGTON HOSPITAL FOR WOMEN, PHILADELPHIA.

THE revival of symphysiotomy is due to the genius of Morisani, of Naples; its introduction into the United States, to our distinguished Fellow, Dr. Robert P. Harris. Now that the results of symphysiotomy are known, as accomplished by the operation done under modern aseptic methods, the wonder is that the profession could have been blinded by the prejudices of the past, arising out of the comparative failure of the operation when done without regard to a knowledge of scientific obstetrics or surgery.

The results obtained by Italian operators under the influence of Morisani's teachings took the world by surprise. The fact that the work was being done was well known, but the profession was supercilious and refused to estimate it in a scientific spirit. The old, prejudiced belief that symphysiotomy was necessarily a failure, because it did not permit of an increase in the conjugate diameter of the pelvis, and because it jeopardized the integrity of the pelvic symphyses, was too firmly grounded to be easily set aside, and it required the demonstration of the safe delivery of thirty women, in Italy, having contracted pelves of marked type, before any but Italian surgeons were willing to perform the operation.

The old objections to the operation were: 1. That in contracted pelves, as a rule, the antero-posterior diameter is the shortened diameter; and that this diameter is scarcely, if at all, increased by the operation. 2. That there is great danger of rupture of the sacro-iliac symphyses. 3. That the symphysis pubis would not unite properly; and hence that the powers of locomotion in women subjected to the operation would be greatly lessened. Experience has shown each of these objections to be groundless or much overstated. Undoubtedly the oblique and transverse diameters of the pelvis are increased more than the antero-posterior, but this diameter also is increased. When the pelvic bones are separated from two to two and a half inches, enough room is afforded for the rounded head (perhaps the parietal protuberance) to project into the opening, thus increasing the working space at least half an inch. This increase in space, together with the increase in the oblique diameters, affords the necessary room for delivery, except in cases of very marked deformity.

The objection that the sacro-iliac joints may be ruptured has not been borne out by experience. Nevertheless it should not be forgotten that at times the pelvic joints are ruptured in cases of difficult labor in which symphysiotomy has not been done. This should admonish surgeons to be careful in recommending the operation in cases of marked deformity, especially if the head of the child seems large and well ossified.

The final objection, that the divided symphysis would not unite, is likewise not well founded, as experience has demonstrated that it unites with pleasing uniformity and facility.

Since January 8, 1886, there have been fifty-seven symphysiotomies, and all the women have recovered, except one. This woman (case of Martino, September 22, 1886) had been in labor several days when operated upon, and died of metro-peritonitis, due to infection of the birth-canal, and not to the operation. This fact justifies the conclusion that in proper cases when done early, and after the antiseptic method, symphysiotomy has no mortality. This is true, however, only under the conditions laid down. The history of the operation admonishes us that when done on improper cases, and without asepsis, its mortality is high.

The complications following the operation have been urethral and vesical fistulæ in a few cases. According to Morisani, these were due to a faulty technique. Not having had the opportunity myself to study the recorded cases of symphysiotomy, to

[1] Read before the College of Physicians of Philadelphia, Feb. 1, 1893.

discover accidents resulting from it, I wrote to Dr. Harris, who has recently studied the literature in the preparation of his paper on the subject (*Trans. Amer. Gynecological Society*, 1892). He writes me that since the perfection of the technique, in 1886, there is no case recorded in which the sacro-iliac joints have been injured; no case in which a child has been delivered absolutely dead; and no case in which it was necessary to practise embryotomy to complete the delivery. Even going back to 1866, in 125 symphysiotomies there is but one case recorded of possible injury to the sacro-iliac joint. This was a case of iliac phlegmon, which is by no means necessarily due to joint-injury.

The results to the children delivered by symphysiotomy have been equally good. No child has been born absolutely dead, but six children out of fifty-seven died shortly after birth.

Having thus disposed of the questions heretofore raised concerning the operation, it remains to consider its true field of usefulness and its relation to Cesarean section, the induction of premature labor, and to embryotomy.

The operation has been done, heretofore, principally in cases of flat pelves, and the measurements hereafter given refer to that deformity. Other varieties of deformity are rare, but fortunately the operation is even better adapted in them to facilitate delivery, excepting cases of Naegele or Robert pelves.

The conjugate diameter in the women heretofore operated upon has varied from 66 mm. ($2\frac{5}{8}$ in.) to 97 mm. ($3\frac{13}{16}$ in). There is a general agreement among surgeons to limit the field of symphysiotomy in flat pelves to cases having at least $2\frac{3}{4}$ inches in the conjugate diameter. I find myself in agreement with this opinion. My own experience in delivering a child weighing eight pounds and two ounces through a pelvis of $2\frac{3}{4}$ inches has admonished me that less room would entail very great danger of death to the child, and would put more strain on the sacro-iliac joints than would be judicious.

In this field symphysiotomy comes directly into competition with the Cesarean operation, done for the relative indication. I am convinced of the beneficent nature of the modern Cesarean operation, when done *secundem artem*, and that it has a very low if not a *nil* mortality in the hands of an expert. Nevertheless, it must be acknowledged that the Cesarean operation is a more formidable operation than symphysiotomy, and that its possibilities of morbidity and mortality are undoubtedly greater. Hence I unhesitatingly pronounce in favor of symphysiotomy in this field, and believe that it will soon supplant the Cesarean operation performed for the relative indication. Aside from its absolute claims for preference, there are several relative claims which I believe will prove of great service in practice. The practitioner will not have to overcome a popular prejudice, as is the case with the Cesarean operation. Symphysiotomy is to the public a new operation; hence the public is prepared to estimate its risks as presented by the profession. This is not true of the Cesarean operation, for the modern operation has to bear the evil name of the old operation, and is believed by the public to be almost necessarily fatal. These considerations will render it more easy to gain consent for the performance of symphysiotomy than it has been for the Cesarean section. Another advantage will be that the failure of the natural forces, assisted by art, to accomplish delivery, will prove a convincing argument in favor of the necessity for symphysiotomy. And, happily, the operation can then be done with success, whereas, in the case of the Cesarean operation the favorable time would already have passed by.

Symphysiotomy likewise fills the field heretofore occupied by embryotomy done on the living child. Since the perfection of the technique of the Cesarean operation, in common with many others, I have denied the justifiability of embryotomy done on the living child. With the addition of symphysiotomy to scientific obstetrics I believe that the slaughter of the innocents will cease. The old excuse for embryotomy, that it is justifiable to kill the child to save the mother, no longer holds, for both can be saved either by the Cesarean operation or by symphysiotomy. As I have recently discussed this phase of the subject in a paper read before the Philadelphia County Medical Society (*Amer. Journ. of Obstet.*, 1893) entitled "Cesarean Section and its Substitutes," I have only to add that I believe the greatest good which will be accomplished by symphysiotomy will be that it will put a stop to the killing of unborn infants. Courageous and expert surgeons could save both mother and child by the Cesarean operation, but apparently they could not do away with the practice of embryotomy.

Symphysiotomy, also, has been performed in the same classes of pelves in which, heretofore, the induction of premature labor has been practised. Hence these two operations come into competition. This is a phase of the subject which heretofore has attracted no attention. This fact renders it inexpedient to dogmatize at this time. But I believe that symphysiotomy is destined to supplant the induction of premature labor, especially as a hospital operation and in practice among the ignorant and the poor. Embryotomy heretofore has been employed to terminate arrested labors amongst the poor having deformed pelves. Such people, as a rule, employ midwives or physicians who do not devote much study to their cases prior to the onset of labor. As a result premature labor is seldom induced among this class in private practice. Sym-

physiotomy will now supplant embryotomy among them.

In hospital practice the choice of operation will depend on the mortality of the mother and the child under the two operations. The advantages appear to be decidedly on the side of symphysiotomy. The maternal mortality from the induction of premature labor is variously stated by authorities. For example, according to Wyder's statement 5 per cent. of the mothers and 50 per cent. of the children die. Winckel states that of children born at from seven and a half to eight months only 33 per cent. are actually kept alive. Under the use of the incubator at the Leipzig maternity there was an infant-mortality of 18 per cent. in the hospital, and at the Paris Maternité there was a mortality of 30 per cent. It is also well known that the mortality of premature infants among the poor is very high in the first year of infancy, so that Winckel's estimate is probably correct.

In my judgment 5 per cent. is an excessive estimate of the maternal mortality of the induction of premature labor. One per cent., or certainly 2 per cent., should cover the mortality in careful hands.

The showing under symphysiotomy is much better. The maternal mortality is zero, and the fetal mortality is six in fifty-seven, or less than 11 per cent. The chances of the mature child delivered under symphysiotomy to reach maturity are likewise far greater than those of the immature child delivered about the thirty-fourth week of gestation. This is especially true of the children of the poor.

Among the intelligent and well-to-do, premature labor will probably be elected for a time; but if symphysiotomy continues as successful as it promises, it will supplant the induction of labor even in this class of cases. Intelligent people will not care to run the risk of losing their children from prematurity, or, what is worse, having them suffer from hydrocephalus (which is common in such children), and from various neuroses, if a mature child can be delivered with less risk to the mother under symphysiotomy.

The technique of the operation can be considered conveniently in connection with the report of a case of symphysiotomy which follows.

Mrs. X., the subject of this report, is a small woman, weighing one hundred pounds. She is thirty years of age, and has had five children, the last of which was delivered by symphysiotomy. A complete history of her five labors would be a fairly full consideration of dystocia due to deformity of the pelvis, together with the obstetric procedures used to complete such unnatural labors. The following are the measurements:

Height, 4 feet, 8 inches. A. S. S., 24 cm.; Cr. Il., 26 cm.; Tr., 29 cm.; D. B. (ext. conj.), 16.5; C. D., 8.5; C. V. (estimated), 7 cm.

The first child, a boy, was born after a labor of 19 hours' duration. Delivery was accomplished by the forceps, the head being so injured by the vigorous compression and traction employed that the infant died shortly after birth. The child was not weighed. The second child, a girl, was delivered alive, spontaneously, after a hard labor of 14 hours. She was not weighed, but was so tiny that she was not expected to live. It is safe to say that she did not weigh *more* than five pounds. The third child, a girl, was delivered by Dr. Howard A. Kelly by Cesarean section. She weighed six pounds, fifteen ounces. The fourth child, a girl, I delivered, after the induction of labor at the thirty-sixth week, by a high application of the forceps. The baby weighed five and one-thirty-second pounds. The B. P. of the fetal head was 7.5 cm.; B. T. 6.5. The labor was extremely difficult, lasting 27½ hours. (Vide *Amer. Journ. of Obstet.*, 1890, p. 418).

I met Dr. Kelly in consultation, and concurred in the opinion that Mrs. X.'s third delivery could be accomplished only by craniotomy or the Cesarean operation. Dr. Harris also had expressed the same opinion. Mrs. X. and her husband unhesitatingly elected the Cesarean operation. Even had her medical advisers recommended craniotomy she would have rejected it. This was largely due to the fact that she is a Roman Catholic; but doubtless it was partly owing to the horrible death of a sister (who also had a deformed pelvis) under embryotomy—a combination, I believe, of version, craniotomy, and decapitation. The sister died from loss of blood. The issue of the case demonstrated the wisdom of the advice given, as delivery would clearly have been impossible without diminishing the head of a baby weighing 6 1/16 pounds. This operation met with much unfavorable criticism, part of which was due to ignorance of the exact facts in the case, and to the prejudices arising from so called conservatism, and part of which was due probably to animosity on the part of the critics. After this lapse of time those who were immediately concerned in the case can look back upon this operation with equanimity. Undoubtedly it had much to do with popularizing the Cesarean operation performed for the relative indication in this country.

Had there been a question as to the available room in this pelvis it would be settled by the fourth labor, in which a premature child, weighing 5 1/32 pounds, was delivered with extreme difficulty. This head was delivered with the bi-temporal diameter engaged, and there was no room to spare. The fit was so tight that I feared it would be impossible to deliver the undiminished head. Yet this fetal diameter measured but 6.5 cm.[1]

The fifth labor is the subject of this report. Mrs. X. consulted me when seven months pregnant. I found that already the head was so large that it could not be pressed into the pelvis. Two weeks later this disproportion was evidently greater, and a careful palpation of the child made at this time led me to believe that it was large rather than small.

[1] For a full consideration of the history of this case, *vide* Amer. Journ. of Obstet., 1890, pp. 237 and 418.

Knowing the deformity of the pelvis, and having a lively recollection of the difficulties encountered at the preceding delivery, I became convinced that it would be wiser to do symphysiotomy at full time than to induce premature labor. I so advised the woman, but asked her to reserve her decision until she had consulted Dr. Parish, who agreed with me in advising symphysiotomy as against the induction of premature labor. So far as I know, this is the first time in which symphysiotomy has been elected over the induction of premature labor.

I opened the symphysis, and delivered by a high application of the forceps, December 5, 1892, at the Kensington Hospital for Women. The cervix being well dilated after a labor of eleven hours, the patient was put in the lithotomy position for operation. The bowels and bladder had been emptied, the lower abdominal, pubic, and pudendal regions cleaned, shaved and disinfected, and the vagina douched. The membranes were now ruptured. It was not considered worth while to try forceps-delivery before proceeding with the operation, because the head was free at the superior strait, and clearly too large to engage.

The operation was commenced by making an incision an inch in length in the median line of the abdomen and terminating at the symphysis pubis. This was carried down to and through the muscular and aponeurotic structures. More room was now afforded by detaching the muscle from the pubic bones by cutting transversely with scissors until the left index finger could be passed behind the pubes. The connective tissue back of the pubes is so loose that the finger encountered no resistance, and was easily passed below the pubic arch. The urethra being now depressed and dragged to one side by a catheter in the hands of an assistant, the Galbiati knife was passed along the finger as a guide, and hooked under the symphysis. This was divided by traction on the knife in an upward and forward direction. Much difficulty was encountered, as apparently the ligamentous structures were not abundant, and the knife became wedged between the bones. The symphysiotomy lasted twenty-six minutes. As there was considerable venous oozing, a sponge was packed behind the symphysis and gauze was laid over the wound.

The forceps was now applied, and the baby, a boy, was delivered after an extremely difficult forceps-labor, lasting thirty-seven minutes. This is explained by the fact that the baby weighed 8⅛ pounds, and that the head measurements were B. P., 9.5 cm.; B. T., 9 cm.; S. O. B. 9.5 cm. After the symphysis was divided the bones separated one-fourth of an inch. After vigorous traction with the Hodge forceps they separated two inches, and the head became well engaged. The Tarnier forceps was now applied, when the head descended into the cavity of the pelvis, and a separation of 2½ inches was obtained. Two assistants now supported the pelvis by pressing on the trochanter upon either side, and drawing upon the ilium of the opposite side. It was interesting to observe that the labor followed the mechanism of the flat pelvis. The head descended semi-flexed, with the occiput to the right ilium and the sinciput to the left ilium, until it began to distend the pelvic floor, when flexion and internal rotation took place. The child was delivered asphyxiated, and required careful attention for ten minutes before it was resuscitated. The use of suspension, head downward, dipping in warm and sprinkling with cold water finally brought it around. The placenta was now delivered, and the vagina and the uterus were douched with sublimate solution, 1 : 2000. The sponge was removed from the operation-wound and the hemorrhage found to be controlled. Several silkworm-gut sutures were passed through the skin and muscle in each lip of the wound, which came nicely together. In the meantime the pelvic bones were pressed together by the assistants. A dressing of aristol and gauze was applied over the wound, over this rubber adhesive plaster, and finally a stout binder coming well below the trochanters. The legs also were tied together for some days. The patient was put to bed without shock.

In performing the operation I had the advantage of the counsel of Drs. Harris and Parish, and Drs. Boyd and Parish kindly took charge of the baby. The operation was witnessed by a number of physicians, among others the venerable Dr. J. G. Allen.

The after-history was absolutely uneventful—a normal puerperium. Tender and abraded nipples interfered with the baby's nursing, which prevented him from thriving for a time; but at the present writing he is fat and well. The extreme asphyxia present at birth probably influenced his nutrition for some weeks.

It was interesting to observe the entire absence of pain in the divided symphysis. I had expected considerable pain from the stretching of tissues, especially below the pubic arch; but the patient expressed herself as being perfectly comfortable.

The after-management of the case was somewhat troublesome, owing to the necessity of using a wide binder to preserve immobility of the pelvic bones. The vulva was washed twice daily with sublimate solution, and well dusted with boric acid. The vagina was douched on alternate days, more especially to assist in the rather troublesome task of keeping the parts clean. This was troublesome, because it was thought best to keep the legs together.

As a matter of convenience, I used two binders. The one next the skin was of two thicknesses of heavy muslin, made with "three tails." The outer one was of canvas. The bandages were secured with safety-pins, and finally when the muslin bandage was dispensed with, straps and buckles were attached to the canvas bandage.

In cleaning the patient the outer binder was unfastened, and also the *lower* tail of the muslin binder. The legs were then separated just enough to permit cleansing the vulva. About every third day it became necessary to apply a clean muslin binder. The patient was rolled on her side, the legs being in apposition, and the pelvis supported, when the soiled binder was removed, and the opportunity embraced to wash the region of the buttocks. A clean binder was then placed in position, the pelvis well supported, and the patient rolled on her back,

when the two binders were fastened. In this way it was possible to keep the patient clean, and at the same time keep the pelvis immobile.

Union of the joint was apparently complete in two weeks. The sutures were removed in six days. Wishing to run no risks of poor union, the patient was kept in bed four weeks, then sent home, and confined to bed for another week. Shortly afterward she was doing the housework for a family of six.

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In the discussion following the reading of the paper Dr. R. P. HARRIS said: Dr. Noble's patient came under my observation May, 1888, when I saw her in consultation with Dr. H. A. Kelly at her own house, and recommended that she should go to the Kensington Hospital for Women, and there be delivered by the Cesarean operation, which was performed a few days later. When she was pregnant for the fifth time I had become convinced of the value of symphysiotomy, and thought it adapted to her case, because of the form and size of her pelvis, and recommended that it should be selected as a preparation for delivery.

Unfortunately for the facility of its extraction, the fetus proved to be a male, and much larger than any of her former children, so that it made a very narrow escape for its life, being deeply cyanosed and difficult of resuscitation. It, however, thrived well during its mother's recovery, which was free from any pelvic pain or uneasiness. No convalescence after parturition could have been more devoid of symptoms indicative of the enlargement to which her pelvis had been subjected; and when I examined her on the twenty-second day I found pubic union firm and solid.

Dr. Noble's case is one of the most interesting on record, because of its historic character, as symphysiotomy was brought into contrast with the improved Cesarean section and with delivery under induced labor in the same subject, and all with entire success to mother and child. I know of no parallel case in my obstetric readings, and of no evidence in contrast that is more to the credit of the recently introduced method of delivery.

Under an improved technique and proper antiseptic precautions, the operation of Sigault has been robbed of all traumatic dangers, and would appear to be devoid of any risk, when regarded from a surgical aspect. Deaths have taken place since the operation was perfected by Prof. Morisani, and no doubt will continue to take place, when women are operated upon *in extremis*; just as deaths follow after delivery by the forceps or in cases in which craniotomy has been performed. What we contend is that the prior condition of a parturient woman is not rendered the more likely to prove fatal by reason of the section and opening of her symphysis to aid delivery.

During the past seven years, four women out of seventy have died, in whose cases delivery was accomplished with the aid of symphysiotomy: one in Naples in 1890; one each in Helsingfors, Russia, and in Paris, in 1892, and one in the United States this year. The Neapolitan woman was in labor for several days when taken to hospital; the shoulder presented and the cord prolapsed; delivery was accomplished by version, and death took place in twelve days from metro-peritonitis. The Helsingfors patient died of heart-disease and other organic complications on the second day. She was forty years old, and in her ninth pregnancy. The Paris case had been in labor three days with her fourth child; the forceps had been applied three times at her own home, and four times in hospital; one of the last, antero-posteriorly. She died the day after delivery, and a small perforating laceration was found leading from the uterine cavity into Douglas's cul-de-sac. The fourth death was in a woman almost moribund, having a pulse of 150. The children were lost, except in the cardiac case and the fourth that died. Certainly death could not be ascribed to symphysiotomy in any of these cases.

Since September 29, 1892, this operation has been performed ten times in the United States and once in Canada, saving ten women and eight children. One child died in twenty-four hours, from the effect of long-continued pressure upon its head in the lower pelvis, and one in three days, from meningeal hemorrhage: the third has not been reported.

The American operations have been performed, in chronological order, by Prof. Charles Jewett, of Brooklyn; Prof. Barton Cooke Hirst, of Philadelphia; Prof. Anna E. Broomall, of Philadelphia; Prof. Edwin J. Michael, of Baltimore; Dr. Charles P. Noble, of Philadelphia; Dr. J. A. Springle, of Montreal; Dr. Harry McKennan, of Paris, Illinois; Prof. Henry J. Garrigues, of New York; Dr. John Milton Duff, of Pittsburg; Prof. William T. Lusk, and Prof. Henry C. Coe, of New York. In Dr. McKennan's operation, not having a sufficiently strong bistoury, the symphysis was divided by means of a narrow metacarpal saw, guarded by the index finger.

We may arrange the history of symphysiotomy into three periods, viz.: 1777 to 1858; 1866 to 1886, and 1886 onward. In the first period there were over 100 operations; in the second there were 73; and in the third, as far as heard of, there have been 70, of which 36 were in the year 1892, divided as follows: In France, 13; in the United States, 7; Italy, 6; Germany, 5; Russia, 2; Canada, 1; Ireland, 1, and Austria, 1. As Italy had 12 in 1891, it is probable that there were as many as 40 in 1892, as against 12 in 1891.

Some men cannot comprehend my statistics, and are led to believe that *some* of the unfavorable cases must have been hidden away from those who aided me in their collection, in order that the improvement in results should appear so remarkable. We have only to state that a large proportion of the reports were copied from hospital records, and that many other statements came through correspondence. An examination into the diminished mortality of ovariotomy, the Cesarean section and abdominal hysterectomy will show what marvellous changes have been effected within a few years, in the reduction of the death-rate, under antiseptic management.

It was at one time thought that a Porro-Cesarean section, with the stump treated intra-peritoneally, was almost equivalent to a sentence of death, because only one woman was saved out of the first eleven, and yet 25 operations in order, covering the years 1888, 1889, 1890, 1891, proved fatal to only three women. This week brought me a letter from Prof. Leopold, of Dresden, stating that he had performed the Porro operation

eight times without the death of a mother, and that 42 improved Cesarean sections in the Frauenklinik had cost the lives of but four women.

The results of obstetric surgery in the hands of very skilful men are certainly trying to the faith of the casual observer, but they are none the less worthy of credit. Dr. Hubert Riedinger, of Brünn, Austria, was an early operator after the Porro method, having commenced in 1878; and his records show that he has performed 15 sections, saving all of the women and losing but one child.

The late Karl Braun (13), the late August Breisky (8), and Drs. Riedinger (15), and Leopold (8), had collectively 44 Porro operations, and lost but 3 women and 8 children. Such records show the possibility of the operation, but a general hospital report, as of the Maternities of Leipzig, Dresden, and Vienna, is of much more value in the estimation of risks.

If puerperal celio-hysterotomy and celio-hysterectomy have been so largely reduced in their rates of mortality, why should it be regarded as almost incredible that the operation of symphysiotomy, upon women in a *proper condition*, should have no mortality? If what was once regarded as "the murderous operation of *bi-pubiotomy*" has been recently revived in Paris, under Prof. Adolphe Pinard, with the saving of both mother and child, why should we fear the traumatic results of a simple symphysiotomy? In Pinard's case there was a true conjugate of 8.5 c.m., but one sacro-iliac symphysis was ankylosed, and the pelvis was oblique, hence the change of method. This operation originated with Prof. Galbiati, of Naples, who performed it on March 30, 1832, upon a dwarf three and a half feet high, having a one-inch conjugate; the child was dead, the woman died in four days of gangrene of the genitalia and vagina. Ten years later, Dr. Ippolito repeated the operation in Naples, with the same result. Prof. Pinard evidently thought that this operation originated with Dr. Farabeuf, of Paris, who proposed it to him, and he recommended that it be called by his name instead of *ischio-pubiotomy*, by which he reported it before the French Academy of Medicine, on January 10, 1893.

DR. BARTON COOKE HIRST said: Without doubt this operation has now become firmly fixed among justifiable obstetric procedures. There have already been ten operations in this country, and I shall probably add another to-morrow. I have only one remark to make to-night in regard to this matter. After my own operation, which I have already reported, I had a conversation with the President, and received from him a very original and brilliant suggestion. Dr. Mitchell asked me if there were not some way of permanently enlarging the pelvis in the operation of symphysiotomy. It seemed to him that by the insertion of ivory pegs, or by other means, the widening of the pelvis could be maintained. This is a brilliant idea, and I had hoped to have had before now the opportunity of trying it upon animals. The proposition is very interesting and deserves careful consideration. The enlargement of the pelvis in symphysiotomy is considerable. A recent German experimenter has examined, post-mortem, the pelves of three or four women within a few days after delivery, and has found that with a separation of the symphysis to seven centimeters, symphysiotomy gave an increase of three centimeters in the oblique and transverse diameters, and of over one centimeter in the antero-posterior diameter. This enlarges the capacity of the pelvis materially. It would be a brilliant achievement if this could be made permanent by the operation, and if by medical skill we could transform the previous anatomic condition of the patient. It seems almost like sacrilege to think of it. It reminds one of adding a cubit to one's stature, but it seems possible, and I hope soon to have an opportunity of testing Dr. Mitchell's suggestion upon pregnant animals.

PROMINENT SYMPTOMS OF HYPERPHORIA, AS ILLUSTRATED BY THIRTEEN SUCCESSIVE CASES.[1]

BY HOWARD F. HANSELL, M.D.,
LECTURER ON OPHTHALMOLOGY, JEFFERSON MEDICAL COLLEGE, PHILADELPHIA.

IN this analysis of symptoms only those cases positively traceable to hyperphoria are included, as demonstrated by their relief or cure, following the correction of the muscular anomaly. Other causes, such as errors of refraction, constitutional diseases, and uterine affections, were excluded.

CASES.

No.	Age.	Occupation.
1. Miss F.,	18	School-girl.
2. Mr. F., married,	49	Stock-broker.
3. Mrs. S., "	48	Housekeeper.
4. A. van S., single,	19	Farm-hand.
5. Mr. R., married,	31	Merchant.
6. Mrs. McP., "	35	Housekeeper.
7. Mr. K., "	36	Merchant.
8. Mr. M., "	36	Preacher.
9. Mr. B., "	55	Superintendent R. R.
10. Miss M.,	28	School-teacher.
11. Mr. P., married,	43	Lawyer.
12. Miss P.,	16	School-girl.
13. Capt. M., married,	42	Army officer.

In two cases the patients complained of their eyes only.

No. 7, a strong, healthy man, free from nervousness of every kind, had pain in the near use of his eyes, so that he was altogether debarred from reading. A correction of a low degree of hyperphoria, worn for several months, was of no service. He was relieved by a tenotomy.

No. 3, a small, delicate woman, complained of constant lachrymation. This had been treated unavailingly for two years by the usual methods. A correction of her hyperphoria and astigmatism had been worn for the same length of time. No tears or mucus were retained in the lachrymal sacs, and both nasal ducts were permeable to large sounds. No nasal obstruction could be determined. The condition was favorably modified by two tenotomies.

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[1] Read before the American Ophthalmological Society, July 1892.

Photophobia in moderate degree was present in five cases, Nos. 2, 5, 8, 10, and 11. Exposure to the lights of a theater, combined with the effort of seeing the performance, was followed by pain in the eyes and head. No. 11 suffered intensely for from twelve to eighteen hours after each visit, and was obliged to relinquish that form of amusement. Partial or complete relief was obtained by one or more tenotomies. Pain in the eyeballs, either constant or induced by reading, was a prominent symptom in all of the cases. It presented, however, no points of difference from that due to errors of refraction.

REFLEX SYMPTOMS.—Six cases, Nos. 1, 2, 4, 5, 10, and 11, complained chiefly of headache.

Of these six cases, Nos. 1, 2, 4, and 10 may be classed together. Their headache was a constant dull pain, aggravated by any attempt to use the eyes, by travelling, by bright lights, and by similar circumstances. The pain in Nos. 5 and 11 was of a different character. It was sharp, lancinating, intense, commencing in the eyes and spreading to the head, and was at times attended by nausea and vomiting; it occurred twice or thrice weekly, increasing in severity as the day advanced, and was relieved by a night's rest, or quiet and opiates.

Case 11 demands a special word. His headaches began during his college life, twenty-five years ago, and have continued, varying in intensity and frequency according to his environment and the demands upon his eyes. A correction of myopia and astigmatism had no other effect than to improve his vision. Resumption of business, after a year's absence from home in search of health, was speedily followed by a return to his former condition. A tenotomy for hyperphoria, 2°, has given him entire relief. Six months have passed, and he has suffered but once, a few days after the operation. The history of No. 5 was similar, but extended over a shorter period. His headaches recurred three times weekly, necessitating on those days the abandonment of all work. At at the time of my examination he was wearing a perfect correction for a low degree of mixed astigmatism. Prisms for the correction of hyperphoria, 3°, gave immediate relief, with no relapse in three months.

Six cases, Nos. 2, 6, 8, 9, 10, and 11, suffered with vertigo and dizziness, induced by reading, riding in a carriage or railroad train, or by watching rapidly-moving objects, by bright sunlight or artificial light, or by gazing for a protracted time on objects in close proximity.

Two cases, Nos. 6 and 8, were subjects of violent dyspepsia. Digestion was slow, painful, and incomplete, unless the patients sat quietly, and with closed lids.

In four cases, Nos. 2, 5, 6, and 8, the most conspicuous symptoms were excessive nervousness, irritability of temper, and at times mental confusion, associated with headache and inability to use the eyes without discomfort. Attention had not been directed to the eyes as a possible cause of the trouble until after months or years of unavailing treatment directed to other organs. No. 8 became unfitted, through "nervous prostration," to perform the duties of his profession as a preacher. Study was absolutely impossible; writing a few minutes by artificial light gave him a sleepless night; in conversation his ideas were obscured and thoughts confused by a painful consciousness of self; his temper became irritable; his equanimity was disturbed by trivial incidents of home-life that formerly were unnoticed; he became unsocial, despondent, and fearful of himself. Two tenotomies, separated by an interval of two months, have brought about marked improvement in the mental symptoms, enabled him to again find pleasure in his books, and to partly resume preaching. No. 6 had been under treatment for various affections, including uterine disease, for several years, but at the time she came under my observation was free from physical ailment, and had concluded, as a last resource, upon the advice of her family physician, to consult an ophthalmic surgeon. She was excessively nervous and restless, and could with difficulty remain quiet a few minutes. Indeed, while undergoing examination for refraction, violent twitching of the muscles of the face, arms, and hands developed. Her nervous history included chorea, irritability of temper, temporary loss of memory, or a forgetfulness of the commonest things in every-day life. She was disturbed by trifles, her self-control was lost at times, and only regained by seeking seclusion in a dark room, when her thoughts immediately became logical. I found hyperphoria in emmetropia. A rational explanation of her symptoms should be sought in the exaggeration of the susceptibility of an exceedingly nervous organization, induced by long-continued suffering from uterine and other complications, and maintained, after these causes were removed, by eye-strain. I am warranted in this assumption by the change effected by correcting prisms. After wearing them a few minutes her restlessness subsided. After a few days she reported decided improvement. Withdrawal of the prisms was followed by a renewal of the symptoms. A tenotomy was performed, but I cannot at this time state the final result.

My experience with prisms and tenotomies for the cure of local and reflex symptoms referable to the eyes, but not to an error of refraction, encourages me to seek for their cause in muscular anomalies.

254 S. SIXTEENTH STREET.

ORIGINAL LECTURE.

DESTRUCTION OF THE GASSERIAN GANGLION FOR TRIGEMINAL NEURALGIA; WITH A REPORT OF TWO CASES.

BY ROSWELL PARK, A.M., M.D.,
PROFESSOR OF SURGERY IN THE UNIVERSITY OF BUFFALO, N. Y.

[Reported by A. L. BENEDICT, A.M., M.D.]

CASE I.—This patient, a man aged 53, thin, worn-out, and haggard, shows in every lineament the evidence of intense and prolonged suffering. His history is one of chronic, intractable, spasmodic facial neuralgia of the right side, extending over a period of five years. As is usual in such cases, we cannot elicit any facts from the antecedent history which will account for the neuralgia. In certain cases we may ascribe neuralgia to diseased teeth, to tumors pressing on some part of the fifth nerve, or to manifest reflex causes, but, as a rule, we must look more deeply for an explanation. In this instance, the pain was at first referred to the branches of the second (superior maxillary) division of the fifth nerve; later it involved the first (ophthalmic) division; only rarely has there been pain shooting down the third (inferior maxillary) division. Whether this be a case of true neuralgia or one of neuritis, whether there be some little bony outgrowth, causing pressure on one of the branches of the nerve as it passes from the cranium, and affecting reflexly the other branches, or whether there be no tangible cause for the trouble, the demand for relief is equally urgent. The patient has been sent to me for that relief because life is not worth living to one in his condition and because he has demonstrated his opinion to that effect by more than one attempt at suicide. Although he has been taking morphine in grain-doses, his sufferings have continued and have made him irrational, so that his family have to watch him constantly to keep him from self-destruction. Under these circumstances it is proper to proceed to almost any extreme in order to afford relief, and even if death should occur as the result of surgical interference, the surgeon would not be blamable.

Before describing the operation, let me outline the anatomy of the trifacial nerve. Proceeding from the medulla, it passes beneath the base of the brain to the petrous portion of the temporal bone, over which it passes, crossing the lateral sinus, and enlarging to form the Gasserian ganglion, which is lodged in a depression on the upper surface of this petrous portion. Up to the Gasserian ganglion the nerve is soft and friable and unlike ordinary nerve-tissue as we meet with it surgically; in fact, it more closely resembles the white matter of the brain. After leaving the Gasserian ganglion it becomes firmer and more fibrous, and branches into three strong cords. The first division passes out through the anterior lacerated foramen, to supply the structures of the orbit with common sensation; its largest branch going to the forehead through the supra-orbital foramen or notch, and also supplying the scalp. The second branch makes its exit through the foramen rotundum in the great wing of the sphenoid, whence it passes into the spheno-maxillary fossa. Here it connects with Meckel's ganglion and thence it sends branches in various directions. Its main trunk penetrates the upper jaw and a portion emerges from the infra-orbital foramen. The third division of the trigeminal nerve receives a motor root after leaving the Gasserian ganglion. It passes out through the foramen ovale a little below and behind the foramen rotundum and divides into the inferior dental and gustatory nerves after giving off muscular branches to the pterygoids, the masseter, and the temporal muscles. Although these branches may be accidentally divided, I shall give little attention to them to-day, for the diffusion of the pain points to its source in the Gasserian ganglion and an operation on one of the branches of the nerve would not be radical.

Several routes have been demonstrated by which the Gasserian ganglion can be reached. The first to destroy the ganglion was Professor Rose, of London, who did so at the instigation of a patient willing to risk anything for the sake of relief from the pain which he suffered. He removed the upper jaw—the locality in which most of the pain was felt, trephined through the base of the skull and attacked the ganglion. Professor Horsley has trephined through the skull laterally, and reached the ganglion from above, but the patient did not survive the shock of the operation.

The originator of the operation which I purpose performing to-day is my friend and former teacher, Dr. Andrews, of Chicago. He has reported two operations of his own of this kind; since then I have performed the operation once, and a surgeon of New York City has performed it once. Altogether the ganglion has been attacked about eight times before this.

I shall expose the zygoma by an H-shaped incision, saw it in two places, and turn down the detached portion with the masseter muscle. In order to secure the zygoma in place again, it will be necessary to drill each side of each line of section, and the drill-holes can be made more conveniently while the bone is firm than after dividing it. The turning down of the zygoma exposes the coronoid process of the inferior maxilla with the insertion of the temporal muscle. This process is also to be drilled twice and sawed across. Then, with the mouth widely opened, there is a space, not liberal but yet sufficient to allow one to attack the base of the skull under the Gasserian ganglion. There is a quantity of fat and connective tissue to be cleaned away from this fossa and the internal maxillary artery will probably require ligation. Then we get to the pterygoid plate, from which the external pterygoid muscle takes its origin. This muscle must be cleared away, perhaps by detaching it from the bone, perhaps by dividing it. Although it is a useful muscle, it is not essential and we may, if necessary, remove it entirely. Following the external pterygoid plate as a guide, we reach the foramen ovale, through which emerges the third division of the fifth nerve. The Gasserian ganglion lies between two layers of the dura mater, which splits to enfold it. The lower layer is very thin; the upper layer is strong and protects the superjacent structures. It is not possible to exsect the ganglion as one might take out a tumor, for it is concealed from view and is soft and friable. I expect to tear it with a blunt hook and knife and thus to dispose of it as far as its function is concerned. If you recall the proximity of the middle meningeal and internal carotid arteries to the lateral sinus, you can appreciate

the difficulty of the operation. At my operation last summer, two hours and a quarter were consumed, but the greater part of the time was spent in checking hemorrhage from numerous small vessels in the sphenomaxillary fossa. I have decided to obviate this difficulty by tying the common carotid artery at the point of election, the guide being the anterior border of the sterno-cleido-mastoid muscle. There is usually found a little vein connecting the facial with the internal jugular, or sometimes the external jugular lies across the line of incision. This, however, is a matter of trifling moment. After dividing the platysma myoides and removing some connective tissue, I get down upon the carotid sheath. The descendens noni nerve lies upon this, and I turn it aside before dividing the sheath. It would cause no very serious trouble if one should fail to recognize the descendens noni and divide it. By means of a moderate-sized catgut thread I draw a heavy catgut ligature around the artery from the inner side. After tying the artery, I close the outer wound with a continuous buried suture, which has the advantage over the interrupted suture of being more quickly made and of leaving no cross-marks on the scar. An antiseptic gauze dressing is applied, and by the expenditure of a few minutes' time I hope to avoid the hour's delay which I experienced at the former operation. No one else, so far as I know, has seen fit to ligate the carotid before the main operation.

Now, as I make the H-shaped incision over the zygoma, you see what anastomosis will do, for in spite of tying the common carotid, there is considerable hemorrhage. I next scrape back the periosteum to expose a track for the saw, make the four drill-holes and saw and chisel through the bone.

The patient is pretty feeble, and if his strength shows signs of failing, I shall abandon the proposed operation and content myself with extirpating Meckel's ganglion, thereby hoping to do away with most of the pain, which is referred mainly to the second division of the nerve.

The balance of the operation was completed without special incident. The base of the skull was easily exposed, and the benefit of tying the carotid became very apparent, as very little delay was caused by hemorrhage, either active or passive. The trephine driven by the De Vilbis engine was used for a part of the work of exposing the ganglion, and small chisels for the rest. The dura was then opened, the ganglion broken up with a blunt hook, the second branch pulled out from the foramen rotundum, and, together with Meckel's ganglion, excised. The wound was then closed without drainage. A small incision was next made over the supra-orbital notch and the nerve found and pulled out from its channel till it broke; the external portion was removed.

The patient rallied well from shock and the wound healed rapidly, there being only a little superficial late suppuration. Pain was relieved at once, and the patient returned to his home, in Fairport, N. Y., in about twelve days.

CASE II.—The patient was an anemic woman of fifty-four. The right lateral region of the head had been previously shaved, and the head was enveloped in an antiseptic dressing. Chloroform was administered. After the patient was placed on the operating-table the forehead, eyebrow and side of the face were shaved in order to remove fine hairs and sebaceous matter. The brow was shaved in anticipation of the possible necessity of operating on the supra-orbital branch of the ophthalmic nerve.

The first incision, 5 cm. long, was made at 11.35 A.M., directly downward from the external angle of the orbit. The second incision was parallel to the first, ½ cm. in front of the tragus. These incisions were connected by a horizontal incision over the zygoma. The periosteal elevator was used to mark the lines of division of the zygoma. The telescope drill was applied to either side of each line, the zygoma separated by saw and forceps at the outer line, by saw and chisel at the inner line. One of the inner perforations was crossed by the line of section of the bone, and another perforation was made. Spiculæ of bone were removed by the cutting-forceps. Fat was removed from the zygomatic fossa and three small bleeding vessels were tied. The elevator was slipped under the coronoid process of the inferior maxilla, and the bone drilled twice for subsequent wiring.

At 11.49 the coronoid process was severed by cutting-forceps and reflected upward. There ensued much venous oozing, that prevented the finding of the internal maxillary artery. The wound was stuffed with gauze for two or three minutes. An assistant then held the mouth open, the absence of teeth rendering the gag superfluous. A 5 per cent. antipyrin-spray was used to check hemorrhage. At 12.04 the internal maxillary artery was found to have been accidentally divided; one end was pulsating but closed by a clot, the other end was bleeding. Both extremities were tied with fine catgut. The artery was very small.

Dr. Park stated that he could now feel the foramen ovale, but could not feel the nerve. Small sponges in hemostats were used to clear the bone of fat, cellular tissue and blood. At 12.15, the antipyrin-spray was again used. A trephine about ½ cm. in diameter was applied to the sphenoid bone, the motive power being a surgical engine turned by hand. After penetrating the bone and removing the fragments, there was some hemorrhage from the small meningeal artery, which is easily torn in such operations. The trephine-opening was connected with the foramen ovale by means of a small chisel. Delay followed on account of hemorrhage. At 12.45, the dura matter, pulsating, bulging under the Gasserian ganglion, was exposed in an oval area about 1 cm. by ½ cm. At 12.56, the outer layer of the dura, apparently double, was divided and the ganglion exposed. On attempting to cut it there was considerable hemorrhage. A blunt wire applicator bent into a hook was used to tear the ganglion. The cavity was stuffed with gauze to control hemorrhage. The bony margins were chipped away with a chisel. Transmitted impulse was very marked. The antipyrin-spray was again used. At 1.10 the fragments of the ganglion were torn away with a small hook, the second branch of the nerve was pulled out of its channel and a portion, including Meckel's ganglion, was cut away. The supra-orbital nerve was pulled through the notch and excised. The coronoid process was restored to its place with silver wire passed through the drill-holes. The zygoma was similarly secured. The wound was closed with catgut over catgut drainage and an antiseptic dressing was applied.

CLINICAL MEMORANDA.

SEVERE FRACTURE OF THE VERTEX, WITH REPLACEMENT OF A LARGE FRAGMENT OF BONE.

BY HOMER R. PAGE, A.M., M.D.,
PROFESSOR OF OBSTETRICS, IOWA COLLEGE OF PHYSICIANS AND SURGEONS, DES MOINES,
AND
WOODS HUTCHINSON, A.M., M.D.,
PROFESSOR OF ANATOMY, STATE UNIVERSITY OF IOWA.

OUR excuse for presenting this case is principally the unusual size of the fragment removed and the promptness with which it reunited with the periosteum. So far as our research has extended, it appears to be the largest piece of bone on record completely torn from its attachments and successfully replaced. The extent and distribution of the pareses are also of some interest.

At about noon of June 17, 1891, we were summoned to an "accident case" at a coal-mine about three miles east of Des Moines. On our arrival at the place we found the "pit-boss," a Scandinavian of about thirty-five years of age and a magnificent specimen of physical development, lying upon a rickety cot in the shanty at the mouth of the pit, with the top of his head literally crushed in.

We were told that about an hour before he had gone down into the mine on a tour of inspection, and sending the cage-tender to make some repairs, had taken charge of the shaft-base himself. While reaching forward into the cage to get hold of an empty truck, he was struck on the head and rendered senseless by a large piece of falling coal, which had in some way been dislodged from a loaded car at the top of the shaft, 120 feet above. One of the men heard the whiz of the falling coal, followed by a heavy thud, and running to the spot found the boss stretched across the empty truck, with a frightful gash across the top of his head.

The wounded man was lying quietly on his cot, in a curiously apathetic condition, his eyes wide open and glancing with apparent recognition at everybody about him, without a sign or trace of pain, or even uneasiness in his position or expression, and completely aphasic. He seemed to hear perfectly, turning eyes and face promptly toward the speaker; his pupils were normal in size and activity; breathing was easy and regular; the pulse was 70, full and elastic; face and extremities were pale and cool. The man could move his right hand and arm fairly, but slowly, and opened his mouth and protruded his tongue with perfect steadiness when directed to do so, but otherwise seemed completely helpless. When his wound was touched the muscles of his face moved a little, but with no sign of pain. In short, there was loss of speech and of sensibility and motility in the greater part of his body, though in other respects the condition of the man appeared normal. He swallowed readily the liquids given him, and the sphincters were unaffected.

On examination, a gash was found extending from about the right parietal eminence to about an inch above the left mastoid process, at the bottom of which could be felt and seen a long, jagged, depressed fracture. Any operation in that tumble-down shanty, with no furniture save a broken cot and rusty stove, being out of the question, a temporary dressing was hastily applied and the man was lifted into an ambulance, which had followed us from the city, and conveyed to his home, some three miles distant. Just as the dressing was being laid in place, the patient lifted his right hand to his head, and withdrawing it covered with blood, held it before his face and gazed at it curiously for several seconds, seeming to recognize the condition of affairs, but without giving the slightest sign of fear or uneasiness. He stood the trip splendidly, without any appearance of discomfort except a slight contraction of the facial muscles as he was being lifted into the ambulance. Everything was in readiness by the time he arrived—a large dining-table covered with blankets and an oil-cloth, several gallons of boiled water, and the instruments arranged in boiled water.

On careful examination a large segment of the calvarium, about 4½ by 2½ inches, of a triangular shape, was found depressed completely below the surface of the inner table: its longest (posterior) border ran diagonally across the vertex, from 5½ inches directly above the right to 4 inches above and ½ inch behind the left auditory meatus, while its obtuse angle lay directed forward at a point 4½ inches above the middle of the left superciliary ridge. The surface of the depressed portion and of the skull for from ½ to 1 inch all around was completely stripped of periosteum, which, with the other tissue of the scalp, was turned forward in a huge matted flap, swollen by extravasated blood to a thickness of fully ⅔ of an inch, and with its edges and under surface literally asphalted with coal-dust.

A little extension of the gash at its edges with a scalpel allowed this to be turned forward completely out of the field of operation, and the cavity having been thoroughly cleansed and flushed with very hot (110°–120°) boiled water, the head was shaved and a couple of buttons removed with a half-inch trephine, one in front about an inch from the right extremity of the fracture, and the other behind and about half an inch from the left extremity. The patient winced a little at the gritting of the trephine and groaned slightly, but otherwise gave no sign of pain during the operation, so that no anesthetic was required.

An elevator was introduced, first through one hole and then through the other, but the fragment was positively overlapped by the edges of the skull, like a keystone by the sides of an arch, and it was only by each taking an elevator and literally prying the edges backward and the fragment upward, that it could be made to budge. When it did become loose, it was with such suddenness that the piece went flying not only clear of the wound, but almost clear of the table.

Only a few shattered fragments of bone were left, at about the middle of the posterior border of the gap. The large fragment was promptly placed in a bowl of blood and hot water, and the operation proceeded with. After the shattered pieces were removed, and the surface of the inner table all around had been explored for splinters with the finger, the dura was found unbroken except at a point near the left acute angle of the gap, where a small spicule had been driven through it to the depth of about half an inch.

There was a good deal of bulging of the membranes,

and subdural hemorrhage was feared; in fact, there was quite a free flow of blood through the puncture made by the spicule; but it appeared to be principally venous, and we succeeded in checking it entirely and moderating the bulging by prolonged affusion with hot (boiled) water poured out of a pitcher into the wound. This done, the fragment was taken out of the bowl of "culture-fluid," and after much manipulation and the application of considerable lateral traction was reinserted into the gap, the sides of which held it as if in a vise. It fitted as accurately as a segment of a Chinese puzzle, with the exception of the small space on the posterior border occupied by the shattered fragments. Neither these nor the trephine-buttons were replaced, with a view to leaving a ltttle room for relief of any tension that might occur.

The wound was then freely flushed with a fifteen-volume solution of hydrogen dioxid, and the edges of the flap were thoroughly cleansed with the same solution and stitched together as accurately as possible, although perfect coaptation seemed almost out of the question on account of the swollen condition of the tissues of the scalp. No opening was left for drainage, and a simple pad of moist carbolized gauze dusted with iodoform was applied.

Almost immediately upon the elevation of the fragment the patient lifted his head, inquired where he was, and answered questions slowly but rationally; he also winced when the hot water was poured into the wound, and when the sutures were introduced; but, when asked if he felt any pain, replied: "None to speak of."

The operation occupied about an hour and a half, and at its close the patient was in a condition of shock, though not at all profoundly so. A subcutaneous injection of strychnine, with morphine and atropine, was given; hot bricks and bottles were packed around him in bed; and he soon rallied. Four hours later he was perfectly conscious and resting quietly, with a weak but otherwise natural pulse. On the next morning his temperature was 99°, his pulse 72.

When the dressing was removed the swelling of the scalp was found greatly diminished, the edges of the wound glued together, and not a drop of pus anywhere. There had been a free leakage of reddish serum into the dressing. The parts were flooded with hydrogen dioxid, and the dressing was reapplied. On the next morning the temperature was 99°, the pulse 75; the swelling of the scalp was two-thirds gone and the wound united by first intention along its whole course, with the exception of the lowest angle, where there was a slight opening, through which we pressed out nearly half an ounce of reddish fluid, resembling broken-down blood-clot.

On the following day (June 20th) the temperature stood at 98.5°, where it remained all through the remainder of the case, and a smaller amount of reddish fluid was passed out through the opening at the lower angle. Some ecchymosis developed at the left temple, but gave no trouble, and gradually faded away in a few days. The patient then took fluid food freely, stating that he felt "only a little soreness of the scalp"; he rested quietly during the day, but at night was restless and inclined to be delirious, twisting about in the bed, clutching at the bandages, and attempting to scratch the top of his head. From this time forward the surgical course of the case was an uneventful progress toward recovery. There was absolutely no formation of pus, the only discharge being a slight amount of clear, yellowish fluid of about the consistency and appearance of honey.

About two weeks after the accident the probe detected a patch of bare bone, about half an inch in diameter, at the point of greatest splintering, and a number of tiny osseous spiculæ were discharged at intervals, up to as late as eight months afterward; but with this exception the whole fragment seems to have united with both periosteum and diploë perfectly.

The mental condition of the man was normal throughout, with the exception of the nocturnal delirium spoken of, which on one or two occasions rendered him quite difficult to control, and a decided irritability of temper and suspiciousness of mind on the third and fourth days, especially toward his wife, whom he several times ordered out of the room, saying that she was trying to keep him from getting well. These manifestations, however, soon passed away.

The most interesting features in the case were the pareses, which were strikingly characteristic. Upon recovery from the shock of operation, both legs were found to be completely paralyzed, with the exception of the right hip and thigh, which were only partly so, and could be slowly flexed on the body with a little assistance from the right hand. The left arm was powerless, with the exception of a little feeble movement in the forearm and hand; while the right arm was under good control, with the exception of the deltoid, in consequence of which he was unable to lift it above the level of the shoulder. The muscles of neck, face, jaws, and trunk were apparently unaffected. Speech was somewhat hesitating, but otherwise perfect.

Sensibility was everywhere preserved, although apparently slightly dulled, as the man felt little or no pain when the wound was dressed or touched. The sphincters were unaffected. The pareses remained stationary, or, if changed, were slightly increased for three days, after which gradual improvement set in, which steadily continued to recovery, except in the right leg.

In ten days the man began to move the left leg a little; in a month he could stand alone for a few minutes; in six weeks he was able to scramble into his buggy and drive to the office or to walk about slowly with a couple of sticks.

At present, a year after the accident, the man has perfect control of all of his muscles, excepting those of the right leg and thigh, which still feel "heavy and stiff." The disability is decidedly most marked in the calf and foot, which latter, when lifted, tends to assume the fetal position, with the sole drawn upward and inward. The muscles are firm, well-nourished, and strong; the limb will support his whole weight easily, and if he moves slowly and quietly he can, with the aid of a cane, walk considerable distances with ease; but if he gets excited or attempts to hurry, the leg "goes stiff" at once, and he can hardly move it. There are and have been no sensory disturbances except a well-marked and at times severe tingling and "cramping" while the pareses were first disappearing.

Upon careful measurement, the posterior scar was found to extend diagonally across the vertex from a point three inches above the posterior border of the left

mastoid process to a point just in front of the right parietal eminence. The posterior line of fracture lay half an inch anteriorly to and was one inch shorter at either extremity than this. From the extremities of this, two slightly elevated and roughened lines of united fracture could be distinctly traced, running forward and inward and meeting four and one-half inches directly above the middle of the left superciliary ridge (at the coronal suture, three-quarters of an inch below the bregma), thus making the replaced fragment four and one-half inches in length by two and one-quarter inches in its greatest (antero-posterior) breadth.

The posterior line of fracture—the line of actual impact and of greatest depression—crossed the sagittal suture about one-eighth of an inch behind the upper extremity of the fissure of Rolando according to Thane (seven inches out of thirteen and one-quarter inches), or about one-quarter inch behind, according to Broca (two and one-eighth inches behind bregma), while the area of splintering, in which the spicule penetrated the dura and from which dead bone was subsequently discharged, lay three-quarters of an inch to the left of and half an inch anteriorly to this, thus covering accurately the very center of Horsley's "leg-area." The other pareses have an equally clear origin. While the fragment was depressed, its extremities, of course, reached lower down upon the surface of the brain, low enough upon the left side to press upon the speech-center and produce aphasia, which was promptly relieved by the elevation of the bone, while it completely covered the leg-area and arm-area on both sides, with the exception of that portion of the left arm-area lying anteriorly to the Rolandic fissure (for the right forearm and hand).

The centers that lie highest were most severely affected in regular gradation: the legs were more completely paralyzed than the arms, and were much slower in recovering. The same is true as between the different parts of each limb; in the arms, the fingers and hands were the least affected and quickest to recover; the shoulders most affected and slowest; indeed, I think there is still a little lack of power in the right shoulder, although the patient declares it to be as strong as ever.

In the legs, the hips and thighs were the least affected and first to recover; the ankles and feet, most affected and last to recover; the only marked remaining paresis being that of the right foot and calf.

In view of the shattering of the bone and wounding of the dura in this region, it seems probable that a certain amount of cortical tissue was damaged beyond possibility of repair, and that such control as the patient possesses over the limb is through the functional activity of the corresponding center of the opposite side—a fact that would also account for its "growing stiff" during hurry or excitement, the center being, so to speak, not yet educated up to taking care of both limbs at once under pressure.

Paraldehyde for Spasmodic Asthma.—MACKIE (*British Medical Journal*, No. 1672, p. 65) has reported the employment of half-dram doses of paraldehyde, repeated every half-hour or hour, in the treatment of a number of cases of spasmodic asthma, with uniformly successful results. Spasm was speedily relieved and sleep soon followed. In no case were more than three doses required, and usually one sufficed.

ACHILLODYNIA.[1]

BY AUGUSTUS A. ESHNER, M.D.,
CHIEF CLINICAL ASSISTANT, OUT-PATIENT MEDICAL DEPARTMENT, JEFFERSON MEDICAL COLLEGE, PHILADELPHIA.

THE man whose case I herewith detail presented himself at Jefferson Medical College Hospital, in the service of Dr. H. A. Hare (by whose courtesy this report is made), complaining of swelling and soreness in the region of the heels, that had been present for about four weeks. He was twenty-two years old, a car-cleaner by occupation, and stated that he had had a similar attack three and a half years previously that lasted for about fourteen months, and apparently had disappeared spontaneously. The pain appeared after walking, and was relieved by rest, either in the sitting or recumbent posture. The swelling, however, persisted. There had been no traumatism of the parts, and there was no history of rheumatism, and none of gout. The man had been infected with gonorrhea four years previously (that is, half a year preceding the first attack of swelling and pain about the heels). The urethritis had never been entirely cured, remaining at times latent for months, and then breaking out with its former intensity. Within this time, he stated, one of the testicles (perhaps it was the epididymis) had been swollen, and there had been enlargement of one or more glands in the right groin. No history could be obtained of a sore upon the genitals, of cutaneous eruption, of involvement of the mucous membranes, of alopecia or of other manifestation suggestive of secondary syphilis. There was no heart-lesion, and the urine presented no abnormality. There was no history of a similar affection in other members of the family.

On examination a firm swelling was found above the heels, apparently inseparable from the os calcis, and over which passed the tendo Achillis. Manipulation induced pain. Station was steady; the knee-jerks were preserved; the pupils were equal, regular, and responsive to light. I was at a loss to account for the condition, as I had never before seen its counterpart; and in the absence of more definite information I made a tentative diagnosis of syphilis. It was directed that small blisters be applied to the heels on either side of the tendo Achillis, and potassium iodide was prescribed for use internally. The man returned a short time afterward, unimproved.

A few days days after the case had presented itself I came by chance across a note in the *Wiener medicinische Presse*, 1892, No. 2, p. 43, by Professor Albert, of the University of Vienna, in which he reports one of a half, dozen cases that he has encountered in the course of a number of years, characterized by intolerable pain on walking or standing, while no discomfort was suffered in the sitting or recumbent posture. The pain was accurately referred to the insertion of the tendo Achillis, in which situation there was sometimes also a slight prominence, as if the tendon were thickened. As a rule the parts were not unduly sensitive upon pressure. In some cases the bone on either side of the tendinous insertion appeared to be enlarged. The pain was exceedingly rebellious and resisted hot applications, cold applications, counter-irritation with tincture of iodine and

[1] Read before the Philadelphia County Medical Society, February 8, 1893.

inunctions of mercury. Albert was unable to find any reference to the subject in literature. He relates that Raynal and Kirmisson have described a "peri-tendinous cellulitis of the tendo Achillis," which, however, does not agree with the condition under consideration; and he refers to a description by Pitha (Pitha-Billroth's *Handbook of General and Special Surgery*) of a "partial rupture of the tendo Achillis" and a "partial evulsion of the insertion of the tendo Achillis," in which the symptoms recorded agree with those here detailed. The opinion is expressed that the cases attended with swelling of the tendon are described as instances of rupture, while the cases in which enlargement of the bone is present are considered as instances of evulsion. In one case of Albert's the pain was aggravated by exacerbations of a specific urethritis. Kirmisson is also quoted as having noted in one case a connection with an attack of gonorrhea. Albert suggests that the condition may be analogous to a deformity sometimes found in horseback riders, dependent upon a hyperplasia of periosteum and bone at the point of attachment of the great adductor muscle of the thigh.

The name achillodynia is proposed for the affection, and is sufficiently descriptive, without committing one to any view as to its nature, etiology, and pathology. Concerning these we can only speculate. To complete the analogy with the condition found in riders, there should be, as suggested by my friend Dr. J. K. Young, a history of some corresponding muscular strain, such as standing on the toes for a considerable length of time. This was not present in the case here reported. The affection should thus be frequently encountered in professional dancers. The condition does not seem to be an acute inflammation. If the process be at all inflammatory the action is of an exceedingly low grade. The condition may be a neurosis, with trophic changes. There is one other possibility, and that is that, in some cases at least, the condition is a manifestation of an intoxication of gonorrheal origin.

I do not know what importance is to be attached to the condition here considered. Possibly it is less uncommon than would appear. I present the case as a clinical curiosity. It may prove interesting, perhaps instructive to others who may have encountered cases of a similar kind.

The features that seem to me to be of especial interest are the circumscribed character and the symmetry of involvement; the thickening above the heels; the absence of inflammatory symptoms; the presence of the pain only after walking; and the apparent spontaneous subsidence of the first attack.

A RARE OCCUPATION-NEUROSIS.

BY HAROLD N. MOYER, M.D.,
OF CHICAGO.

WRITER'S cramp was the first of the group of occupation-neuroses to be studied. For a short time it stood alone, but soon a number of other allied disorders, peculiar to those who pursue special occupations, were described, and they have all finally been grouped under the general term. It is probable that the occupation muscular atrophies ought to be included in the same general category. While the pathologic changes in these disorders are very diverse, they all have a common etiology in the continued use of special muscles or groups of muscles.

Those occupations that require a continuous and delicate adjustment of the muscles of the hand seem to be most liable to this affection, the disorder being most frequently observed in writers, violinists, pianists, and telegraphers; but examples are not wanting in those occupations requiring extended excursions of the limbs and the use of the larger muscles, such as ballet-dancing, blacksmithing, and the like.

The occupation-neuroses may be naturally classified, according to the predominant symptoms, into spastic, neuralgic, tremulous, and paralytic forms; though it should be remembered that all of these occupation-neuroses bespeak essentially a disturbance in motility. It is probable that in most of them we have an essential neurosis, without structural change, though some form of peripheral neuritis often complicates the disorder.

The following case is unique in some respects, and, following precedent in these cases, might not inaptly be termed the shoe-salesman's disease.

S. C., twenty-six years of age, single, is a salesman in a large retail shoe-store. The family history is good. Though the patient is decidedly nervous, he has never had any serious sickness or injury. Four months ago he noticed a stiffness in both feet, but more marked in the right. He was then in the habit of sitting upon the right heel when engaged in fitting shoes; when in this position the foot was sharply flexed upon the leg, and the leg on the thigh. As he used the right leg the more in this way he changed to the left, when he observed that it in turn was more affected. He then began to use the right leg again, and the latter now gives him the more trouble.

There is very considerable loss of power in the anterior tibial muscles, especially on the right side. The foot on this side cannot be flexed beyond a right angle. On the left side he can do somewhat better, but there is a decided loss of power.

The right great toe is cold and numb. Extending from its tip to about the middle of the dorsum of the foot is a space, about one inch in width, in which the tactile sense and the temperature-sense are greatly impaired. There is, however, no loss of pain-sense in this area. Sensation in the left foot and leg is not impaired. The deep reflexes are symmetrically increased. There is no incoördination or evidence of disturbance in the central nervous system, with the exception of mild neurasthenia. The faradic current gives a contraction over the tibialis anticus with a coil distance of 5 cm. The contraction was alike on both sides. The galvanic gave K. C. C. 7 m.a. on the right side, and A. C. C. 4.5 m.a. On the left side minimum contractions were obtained by K. C. C. 7 m.a., and A. C. C. 7 m.a. The peroneal nerve gave a normal series of reactions.

It will be seen from a consideration of the foregoing symptoms that we have an occupation-neurosis, but one that is apparently dependent upon changes in the muscles or nerve-endings. The electric reactions show only a partial degeneration. The anodal contraction exceeds the kathodal in the right, or most affected, leg, but in the other the kathodal and anodal are equal. The faradic reaction is substantially alike on both sides. It is possible that we might have a pressure-paralysis, but it is difficult to see how pressure could be applied to the nerve

which supplies the anterior tibial muscle in the position in which the man habitually worked. The fact that the disorder affected the opposite side as soon as it was brought into use is against this view. The electric examinations thus far made in the occupation-neuroses are very contradictory, and it is impossible to say whether neuritis can be excluded by this means or not. It is just possible that the case may have some relation to the "paradoxical contraction" of Westphal. Certainly we have in this case a "paradoxical paralysis" in the fact that it occurred in a muscle that was placed in extreme relaxation by the movements which produced and intensified the paralysis.

MEDICAL PROGRESS.

Gastrotomy for the Removal of a Peach-stone from the Esophagus.—FINNEY (*Bulletin of the Johns Hopkins Hospital*, iii, 26, p. 117) has reported the case of a farmer, forty-nine years old, who, while eating a peach, stumbled and fell, and, in the sudden effort to recover himself, swallowed the stone, together with a portion of the peach. There was at once a sense of lodgment of the body about half-way down the esophagus. Immediately after the accident, prolonged and forcible, but unsuccessful attempts at removal had been made. For four days the man was unable to swallow more than half a teaspoonful of water at a time. There was a constant feeling, at times painful, of the presence of a foreign body in the gullet, with a continual inclination to swallow. A small, ivory-tipped probang encountered an impassable obstruction 12.3 inches from the incisor teeth. A sensation of tapping a solid body was perceived. It was impossible to dislodge the obstruction by means of bougies. On the following day the patient was anesthetized, and the probang was found to pass the obstruction, without, however, dislodging it. No better success was had with a horsehair probang and a flexible bougie. Preparation had been made to perform gastrotomy, if the circumstances warranted. An incision, 5¾ inches long, was made, parallel with and three-quarters of an inch below the left costal arch. The stomach was exposed, lifted out, and incised for a distance of two inches. Neither with the hand nor with various instruments tried was it possible to dislodge the foreign body. Finally, a bougie was passed into the esophagus through the stomach, and brought out at the mouth. To the extremity of the bougie was attached a strong silk thread, to this a sponge, and to the sponge another bit of silk. By withdrawing the bougie through the stomach the stone was dislodged, and with the finger hooked out and removed. The various incisions were then closed. The patient had an uneventful convalescence of two weeks. For a few days he was fed by the rectum. Then he was successively given water, crushed ice, milk, and solids. In ten days he was up and out of doors. Two days later he had a slight chill, and the temperature rose to 102.5°. An examination of the blood disclosed the existence of a moderate leukocytosis, but no malarial parasites could be found. In the course of a few days more, dulness on percussion became evident at the base of the left chest. The introduction of an aspirating-needle disclosed the presence of pus, and a diagnosis of mediastinal abscess was made. A portion of the eighth rib was excised, and a large pus-cavity, which appeared to be behind, and to have no communication with the pleural cavity, was evacuated. No bacteria were found in the pus. The patient speedily recovered, and was soon dismissed. He gave a history of always having had some difficulty in deglutition. Six years previously a piece of meat had lodged in the esophagus for thirty hours.

The Relation of the Posterior Root to the Posterior Horn in the Medulla and Cord.—As a result of a careful study, TOOTH (*Journal of Physiology*, December, 1892, p. 773) concludes that the posterior roots are the only points of entrance of sensory or, more broadly, centripetal impressions into the spinal nervous system. In the medulla oblongata the fifth nerve is the great sensory nerve, corresponding to an unknown number of sensory roots. Its so-called ascending root descends in the medulla and cord to the level of the second cervical root, sending fibers all the way to and through the accompanying substantia gelatinosa. The entering posterior root fibers may be divided anatomically into three groups: (1) a mesial group, entering the postero-lateral column, distributed in part to the postero-median column and in part to the base of the horn, to be further distributed to the posterior vesicular column and anterior horns; (2) a middle group, distributed mainly, if not entirely, to the substantia gelatinosa and its plexus; (3) a lateral group, distributed to the border zone. The ascending root of the fifth nerve, in its anatomic relations to the substantia gelatinosa, corresponds to the middle group of a number of posterior roots. At the level of the second cervical root the ascending root and the spinal posterior root are seen together, the former passing into the substantia gelatinosa, the latter round it to the substantia spongiosa. No experimental method of discriminating the various forms of sensory impressions that enter by the groups of fibers named has yet been devised. Certain tracts degenerate after section of the posterior roots, but experimental lesions of these tracts themselves give most uncertain results as regards any of the forms of sensation. The substantia gelatinosa of the cord is continuous with and of the same structure as that of the medulla. A study of the structure of the substantia gelatinosa favors the view that it is nervous, of actual functional value, and not an embryonic remnant. It is possible that its cells stand in functional relation to the entering fibers, so that from this point of view the substantia gelatinosa may be looked upon as one long sensory nucleus extending from the chief nucleus of the fifth (which is a specially developed part of it) to the lower sacral region of the cord. These conclusions are in accordance with the views of Schiff and others, viz., that the gray matter is the path by which sensory impressions reach the higher regions of the nervous system. This paper attempts to limit this path to the substantia gelatinosa and its plexus. How the stimulus passes up to the cerebrum, whether it straggles up cell by cell or by the intervening fibers of the plexus, is at present unknown.

External Esophagotomy for the Removal of a Foreign Body from the Esophagus.—DUFFAU (*Journal de Médecine de Bordeaux*, No. 47, 1892, p. 522) has reported the case of a man, twenty-one years old, who, on attempting to

run, inadvertently swallowed a large stone that he happened to have in his mouth. Little could be seen externally or learned from exploration of the mouth. On palpation, however, a sense of resistance could be appreciated at the level of the sternal notch, and the passage of a bulbous bougie encountered an impassable obstruction at a corresponding point in the esophagus. Deglutition was extremely difficult; only fluids in small quantity could be swallowed. All endeavors to dislodge and remove the body failed. Better results were not had on the following day, after the patient had rested. It was thus finally determined to perform external esophagotomy. An incision, almost four inches long, was made in the course of the anterior margin of the left sterno-mastoid muscle and extending to the level of the sternum. By careful dissection the esophagus was reached and incised. After some difficulty the stone, which was quite firmly impacted in the esophagus, was removed. The field of operation was rendered aseptic and the margins of the incised mucous membrane were united, the muscular coat not being further disturbed. The sheath of the muscle was closed by suture. The bottom of the wound was now packed with gauze, which was brought out at the inferior extremity of the incision. The remainder of the wound was closed by catgut sutures. After the operation the patient was nourished through the medium of a tube. There were no complications. Nine days after the operation the patient was able to take liquids in the usual way, without any escape from the esophageal wound. In a short time recovery was perfect.

Noma in an Adult.—KÖSTER (*Centralbl. f. Chirurgie*, 1892, No. 45, p. 940) has reported the case of a woman, forty-four years old, who was said to have had a left-sided hemorrhagic pleurisy, from which she recovered, but never afterward felt perfectly well, suffering considerably from dyspnea. The hygienic surroundings were poor; the woman was compelled to work hard, and received insufficient food. A swelling appeared upon the inner surface of the left cheek, and in the course of two weeks the entire cheek was swollen. A few days later a bloody, offensive discharge from the mouth set in. The cheek became intensely red, then black, and finally ulcerous. The edematous swelling extended to the whole of the left side of the face. There was slight elevation of temperature. The urine contained no albumin. The gangrene of the cheek progressed until the cheek was perforated. For a year there had been noticed a tumor in the left hypochondrium, at times larger, at times smaller. The spleen was found to be enlarged. There were 3,200,000 red and 20,000 colorless blood-corpuscles to the cubic millimeter. The condition of the woman became progressively worse, and she died in collapse. At the post-mortem examination, in addition to the gangrene of the left cheek and the adjacent gum, the left pleural cavity was found to be obliterated by adhesions, the spleen enlarged, and its capsule greatly thickened, and the kidneys large and white.

A Gas-generating Bacterium in Urine.—SCHOW (*Centralbl. f. Bakteriol. u. Parasitenk.*, xii, 21, p. 745) has isolated from the urine of a case of compression-myelitis, attended with incontinence of urine and cystitis, a short, plump, motile bacillus, capable of generating carbon dioxid. The urine had been noticed to have a sulfurous odor. In most of the cultures of the organism, for which the name cocco-bacillus aërogenes vesicæ is proposed, a peculiar aromatic odor was developed. Cystitis was produced in a dog by injecting an infusion of the culture into the bladder, and applying a ligature to the urethra for a few hours.

THERAPEUTIC NOTES.

For Purulent Cystitis.—

℞.—Iodoform. subtil. pulv. . . . ℥iv.
Mucilag. acaciæ . . . . f℥jss.
Glycerini pur. . . . . f℥vj.
Aquæ destil. . . . . ad. f℥v.—M.

S.—After irrigating the bladder with a solution of lactic acid, 1:400, five drams of the emulsion indicated are carefully injected and permitted to remain for fifteen minutes. The procedure is repeated during several weeks at intervals of several days.—PHILIPPOFF, *Deutsche med. Ztg.*, No. 93; *Wiener med. Presse*, No. 51.

Analgen, or ortho-ethoxy-ana-monobenzoylamidochinolin ($C_9H_5.OC_2H_5.NH.COC_6H_5.N$) is the name given to a white, tasteless compound that is almost insoluble in water, soluble with difficulty in cold alcohol, but more readily in hot alcohol and in dilute acids, and that melts at 406.4° F. The agent has been shown to be non-toxic to dogs. It has been employed in doses of from seven and a half to thirty grains as an analgesic and antineuralgic and as an antipyretic. The reduction of temperature to which it gives rise is attended with sweating.—*Therapeutische Monatshefte*, vi, 12, p. 666.

For Sycosis.—

℞.—Acid. salicylic. . . . gr. x.
Chrysarobin. }
Ichthyol. } . . āā gr. xxiv.
Vaselin. vel lanolin. . . ℥j.—M.

Ft. unguent.

S.—Apply topically with friction and cover with a thin sheet of rubber cloth.

QUINQUAUD, *L'Union Méd.*, No. 144.

Painful Hemorrhoids may, after being washed with a weak solution of mercuric chlorid, with advantage be anointed with the following ointment:

℞.—Lanolin. . . . . ℥v.
Vaselin. . . . . ℥ij.
Aquæ destil. . . . . ℥iij.—M.

The ointment may also be incorporated in a tampon, which can be introduced into the rectum.

Corr.-bl. f. Schw. Aerzte, xxiii, 2.

Puff ball (Lycoperdon giganteum) as a Hemostatic.—SMITH (*Edinburgh Medical Journal*, No. 451, p. 639) reports the successful employment of puff-ball (Lycoperdon giganteum) in the control of hemorrhage in accessible situations. The puff-ball is cut into thin slices, and applied directly to the bleeding-point or surface.

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SATURDAY, FEBRUARY 18, 1893.

LEUKEMIA AND PSEUDO-LEUKEMIA.

NOT a little attention has been devoted during the past few years to the study of the relations of pseudo-leukemia, leukemia, and allied affections, and it would seem that we have arrived at somewhat clearer notions of their mutual interdependence. The close relation of leukemia and pseudo-leukemia is at once evident from the identity, with the exception of the condition of the blood, of the clinical features and from the fact that the pathologic alterations of the blood-forming organs are indistinguishable; yet the single fact of the presence of marked leukocytosis in leukemia has served to maintain this as a separate disease. H. C. WOOD,[1] many years ago, ventured the suggestion that leukocytosis is a feature of too little importance to distinguish one disease from another similar in other respects, but his opinion has until recently found few determined supporters. The reason of this is doubtless to be found in the very striking and unique appearance presented upon microscopic examination of the blood, and the fact that knowledge of the varied conditions that may induce increased numbers of leukocytes in the blood was meager in the day of WOOD'S announcement. We are more fortunate at the present time in recognizing many causes that lead to leukocytosis, albeit of less degree than that seen in leukemia, and this knowledge may aid us in a better conception of the nature of these affections and to divest ourselves of the undue influence with which this condition has, fetish-like, controlled our beliefs.

Beginning with WOOD, a number of observers (MOSLER,[1] FLEISCHER and PENZOLDT,[2] WESTPHAL,[3] SENATOR,[4] EBSTEIN,[5] VON JAKSCH,[6] and more recently RENDU,[7] CROCQ,[8] TOROJE,[9] and PALMA[10]), have recorded cases of Hodgkin's disease that terminated in leukemia. Some of these authors are inclined to regard the increase in the number of colorless blood-corpuscles that occurs at the end of these cases as either a terminal leukocytosis, such as may occur in other diseases (CROCQ), or as an acute leukemia supervening upon a previous pseudo-leukemia (EBSTEIN); but the degree of leukocytosis observed in such cases has far exceeded that which occurs at the termination of other diseases, and the great similarity of the two diseases in all other features would disincline an unbiased mind from accepting the idea of the supervention of a second disease upon the first.

It is further of interest to note that cases of undoubted leukemia have been known to present intervals of freedom from a leukemic condition of the blood, as in the cases of BARR,[11] MACKENZIE,[12] and TOULMIN.[13] If, then, leukocytosis were sufficiently important to justify the view of EBSTEIN and his followers, should we expect to find this symptom absent even for the briefest period during the continuance of the disease? The opinion expressed by others that in the clinical course of true leukemia the anatomic changes in the blood-forming organs may precede definite alterations in the blood by considerable lengths of time, is but a confirmation of the position we maintain, that the

[1] *H. C. Wood:* Phila. Med. Times, Dec. 15, 1870.

[1] *Mosler:* Virchow's Archiv, Bd. cxiv.
[2] *Fleischer and Penzoldt:* Deut. Archiv für klin. Med., 1880, Bd. xxvi.
[3] *Westphal:* Inaug. Diss., Greifswald, 1887.
[4] *Senator:* Berlin. klin. Wochenschr., 1882. No. 35.
[5] *Ebstein:* Deut. Archiv für klin. Med., 1888, Bd. xliv.
[6] *R. von Jaksch:* Wiener klin. Wochenschr., 1889, Nos. 22 and 23.
[7] *Rendu:* L'Union Médicale, June 21, 1892.
[8] *Crocq:* Bruxelles Journ. de Méd., December 20, 1891.
[9] *Toroje:* Deut. med. Wochenschr., April 21, 1892.
[10] *Palma:* Deut. med. Wochenschr., September 21, 1892.
[11] *Barr:* London Lancet, February 21, 1891.
[12] *Mackenzie:* Med. Press and Circ., August 12th.
[13] *Toulmin:* Johns Hopkins Hospital Bulletin, 1891.

leukocytosis of leukemia is a symptom of too little import to warrant the maintenance of a separate and distinct disease upon this alone.

The opinion here expressed receives further corroboration by a consideration of two other allied affections recently described: the *splenomegalie primitive* of DEBOVE and BRUHL,[1] and the *anemia infantum pseudo-leukemica* of VON JAKSCH.[2] The former is a disease in which there occurs an apparently idiopathic enlargement of the spleen, with anemia and debility, and in which the characters of the splenic enlargement coincide entirely with those of leukemia or pseudo-leukemia. There seems, therefore, no sufficient reason for regarding this other than as Hodgkin's disease of splenic type. The infantile pseudo-leukemia of v. JAKSCH, on the other hand, approaches more nearly to the features of leukemia, with the distinctions that the liver enlarges less, the leukocytosis is less profound, and connective-tissue hyperplasia in the spleen is relatively more marked than in leukemia.

In connection with the present discussion, then, we may group these several diseases together as a sequence, beginning with the primary splenomegaly, in which the spleen alone seems involved; then Hodgkin's disease, with implication of the lymphatic glands as well; next v. JAKSCH's pseudo-leukemia, with further addition of leukocytosis and myelogenous involvement; and finally leukemia, in which all of these changes occur to the maximum degree. Viewed in this way it does not seem unreasonable to suppose that we have in all of these cases to do with more or less identical pathologic processes, the degree alone of abnormality varying in the different forms, and being somewhat differently disposed; and this is all the more probable as cases of Hodgkin's disease, as well as primary splenomegaly (CROCQ), have been known to become leukemic, and cases of leukemia, temporarily at least, pseudo-leukemic. If, however, it be urged that the different histology of v. JAKSCH's pseudo-leukemia (the great connective-tissue hyperplasia and absence of lymphatic proliferation) excludes this from the present discussion, have we not, on the other hand, a striking example here of the possibility of extreme leukocytosis (almost as great as in the most pronounced leukemias) aside from leukemia itself? and would not this render increase of leukocytes (properly, as we think) an unimportant symptom, as far at least as establishing a separate disease by its occurrence is concerned?

EICHHORST[1] sought to establish for leukemia an independence by noting the constant occurrence of excess of uric acid in the urine in this disease, and the absence of the symptom in pseudo-leukemia, but the investigations of HORBACZEWSKI[2] and WRIGHT[3] have undoubtedly proved that the excessive uric acid in the urine is merely the result of excess of leukocytes and their destruction in the blood.

We cannot hesitate, therefore, to range ourselves with WOOD,[4] JACCOUD,[5] HENRY,[6] ORTNER,[7] TISSIER,[8] and those others who deny that these affections are essentially separate, but are convinced that they are expressions of the same underlying conditions, whether these be constant or variable.

There is, indeed, no little evidence to incline us to the view that these diseases, pseudo-leukemia and leukemia, are both, after all, but expressions of various pathologic states, whose visible symptoms and gross morbid changes are similar. Thus, in the case of leukemia there is apparently wide difference between the ordinary chronic form of the disease and the interesting cases of acute type, particularly such as those of OBRASTZOW,[9] in which infection and contagion were clearly shown; and no less impressive are the studies of pseudo-leukemia by WAETZOLDT,[10] ASKANACY,[11] and BRENTANO and TANGL.[12] These observers showed clearly that the enlarged glands of cases of pseudo-leukemia contained tubercle-bacilli, and in one case at least were infective for guinea-pigs. Whether or not we accept as conclusive two of these cases, about which the doubt might be entertained that there was secondary tuberculous infection of the enlarged glands, there can be no question of the third, that of ASKA-

[1] *Bruhl:* Arch. Gén. de Méd., June and August, 1891.

[2] *R. von Jaksch:* Loc. cit., et Prag. med. Wochenschr., 1890, Nos. 31–33.

[1] *Eichhorst:* Text-book of Medicine; article "Pseudo-leukemia."

[2] *Horbaczewski:* Aus den Sitzungsberichten der k.-k. Akademie der Wissensch. in Wien, Math.-naturwiss. Classe, Bd. xcviii, Abtheil 3. 1889.

[3] *E. A. Wright:* London Lancet, February 27 et seq., 1892.

[4] *Wood:* Loc. cit.

[5] *Jaccoud:* Leçons de Clinique Méd. de l'Hôp. Lariboisière, 1873.

[6] *Henry:* Universal Annual of the Med. Sciences; article "Leukemia."

[7] *Ortner:* Wiener klin. Wochenschr., November 27, 1890.

[8] *Tissier:* Gaz. des Hôpitaux, July 23, 1892.

[9] *Obrastzow:* Deut. med. Wochenschr., December 17, 1890.

[10] *Waetzoldt:* Centralbl für klin. Med., 1890, No. 45.

[11] *Askanacy:* Beitr. z. allg. Path. und path. Anat., Bd. iii.

[12] *Brentano and Tangl:* Deut. med. Woch., April 23, 1891.

NACY, and we are forced to believe that the manifestations of pseudo-leukemia may sometimes result from lymph-gland tuberculosis. In another carefully studied case (ROUX and LANNOIS[1]) the glands contained the staphylococcus pyogenes aureus, and the glandular proliferation seemed dependent on this microörganism. Finally, the relation of lymphosarcomatosis, as in the cases of ORTNER[2] and of PALMA,[3] to leukemia and pseudo-leukemia, and the striking difference in the spread of this new-growth from that of the ordinary lymphomatous growths of these diseases, are facts suggestive of a varied pathology.

A careful consideration of the present knowledge concerning these diseases would indicate, then, that too much stress has been laid upon the occurrence of leukocytosis, and that we are warranted in accepting JACCOUD'S[4] grouping of both under the term *diathèse lymphogène*, whether we believe the cause of such diathesis to be a constant or a variable one.

THE TAX ON ALCOHOL.

OF all forms of injustice, fraud, and extortion, the robbery of the sick is perhaps the meanest. Physicians should, therefore, at once and in no uncertain manner make their influence felt against the bill (H. R. 9829) introduced by MR. SCOTT and now pending in Congress, to increase the tax on distilled spirits from 90 cents to $1.25 per proof-gallon. Its aspects as a revenue measure do not come within our province to discuss; if they did, we could easily expose its fallacy and shortsightedness. What concerns THE NEWS as a medical journal is that the passage of the bill will greatly increase the cost of all drugs and pharmaceutical preparations into the manufacture of which alcohol enters directly or indirectly; and this means almost all of the preparations used in medicine. It is alleged, with great plausibility, that the bill is framed solely in the interests of that gigantic conspiracy popularly known as the Whiskey Trust; the inevitable economic result being to immediately and enormously increase the actual and prospective revenues of the Trust by the advance of 35 cents per gallon in the price of all the stock at present in its possession, bonded or otherwise; and further to increase the disadvantages imposed upon the lesser capital of distillers who still remain "out" of the Trust; thus helping to crush out the last vestige of competition.

In circulars issued by the Philadelphia Drug Exchange, the Drug-Trade Section of the New York Board of Trade and Transportation, and the National Wholesale Druggists' Association, the methods of the Trust are exposed; and it is shown that so far from increasing the tax on all distilled spirits, Congress should provide for the exemption of alcohol used in the arts or manufactures from even the present tax, as is now done in France and England, and thus enable our manufacturers to meet foreign competitors on more nearly equal terms. Furthermore, it is wisely suggested that a just measure of relief would be the reduction of customs duty upon alcohol from the present prohibitory figure of $2.50 per proof-gallon (equal to $4.70 per wine-gallon) to a figure slightly in excess of the present internal revenue tax, say to $1 00 per proof gallon, as there would then be a limit to the exactions of the Trust; for excessive increase of price would invite foreign competition. Even at this proposed reduction the customs duty would afford a protection of $18\frac{4}{8}$ cents per wine-gallon—"surely sufficient for an article costing 25 cents to produce."

It is greatly to be hoped that the Trust will be found to have overshot its mark; and that not only will the great injustice it proposes not be consummated, but that as a result of the interest aroused Congress will adopt the suggestion of affording relief by exemptions and by reduction of tariff, thus putting an end to the inordinate extortion now practised and sought to be increased.

HYDROGEN DIOXID.

IT is now thirty-five years since BENJAMIN WARD RICHARDSON introduced into practical medicine the use of aqueous and ethereal solutions of hydrogen dioxid (H_2O_2). It is not much more than five years since various American observers have been singing the praises of the agent, with utter disregard of the observations of the man who introduced it and pointed out all its applications and limitations. One thing in particular he showed as the result of prolonged experimentation; namely, that it was impossible to prepare a stable solution in water of more than ten-volume strength. If solutions of greater strength were attempted, it was necessary to render them too acid, and as soon

[1] *Roux and Lannois:* Rev. de Méd., December, 1890.
[2] *Ortner:* Loc cit.
[3] *Palma:* Loc. cit.
[4] *Jaccoud:* Loc cit.

as uncorked they began to lose oxygen; rapidly running down to almost nothing more than H_2O, *i.e.*, hydrogen monoxid—water. Nevertheless, American manufacturers have refused to learn from the great authority of Richardson, and they continue to advertise solutions of more than ten-volume strength. Analyses published in THE MEDICAL NEWS prove the incorrectness of the advertised claims, and the experience of practitioners (excepting those who have by this time become well-recognized as manufacturers' reporting agents) shows that few of the preparations now in the American market can be depended upon; their reliability being, as a rule, in inverse ratio to their respective claims. A moderate acidity is necessary to any stable preparation, even of ten-volume strength; but this is so slight that except for subcutaneous injection it may be disregarded. The preparation now most often supplied on prescription in this city, however, is so highly acid that it gives pain if used, and does harm, for instance, in the throat, especially in children. But in the treatment of diphtheria, of scarlatina, and of various forms of sore throat, hydrogen dioxid is invaluable; and it is repeated experience of the harmfulness of the preparation alluded to that leads to the writing of these lines. If no other preparation can be obtained, the acid should be carefully neutralized with ammonia water or sodium bicarbonate, at the time of using. The subject is an important one, and every physician should personally study it. Two facts should be borne in mind; no preparation that undiluted gives pain should be employed; no preparation claiming more than ten-volume strength can be entirely reliable. As even ten-volume solutions must often be diluted, the necessity for stronger ones is not apparent.

We have for many years used a preparation made in London according to Richardson's directions, but the necessity for special importation renders it unduly expensive. American chemists can do as well as English chemists, if they choose, and they ought to be made to choose.

EDITORIAL COMMENTS.

Physicians as Pharmacists.—It is an admitted axiom in mathematics that "the greater includes the less." It is no less true in all other sciences. The study of pharmacy does not include all the knowledge necessary for the practice of medicine, but the study of medicine does include all the knowledge necessary for the practice of pharmacy, in so far as the protection of the public against danger of mistake is concerned. The manipulative skill that comes by practice is not difficult to obtain, and many physicians, especially country doctors, possess this in a high degree.

For this reason the proposition to repeal Section 11 of an act entitled "An Act to regulate the practice of pharmacy, etc," now pending in the Pennsylvania Legislature, is not only unwise and unjust, but ludicrous. The section in question permits any graduate in medicine, of not less than three years' experience in his profession, and legally qualified to practise medicine in Pennsylvania, to act as a pharmacist without special examination. This wise permission should not be repealed. Why a man who can be trusted to prescribe poisons cannot be permitted to dispense them on others' prescriptions is difficult to comprehend. It is like prohibiting a general of the army from serving as a private. He can order the movements of troops but must not handle a musket. Medical men in Pennsylvania should not permit such an absurdity to disgrace our statute books. Somebody, however, is interested in pushing it, and it will probably be necessary to send formal protests, and perhaps delegations to Harrisburg to prevent the attempt from being successful.

"The American Family Physician's Company."—There have been few more ludicrous attempts to commercialize medical practice than the unblushing attempt to establish in Cincinnati, Ohio, a company to act as go-between, promoter, advertiser, and business manager of the physician in his relations with the patient. These enterprising gentlemen proposed to provide "an absolute and sure method of providing a physician of the highest standing for sickness and accident to any and all members of the family." All one had to do was to "go to the nearest telephone," touch the button—and the company did the rest. The scale of prices for every sort of service was laid out with most commendable accuracy. Unluckily, however, for the medical tradesmen, the Academy of Medicine and the Cincinnati Medical Society said that "a physician cannot be connected with this company and remain a member in good standing of the medical societies." Now, let those "physicians and surgeons of the highest professional standing" reorganize themselves, as our St. Louis friend would say, on "broad-gauge principles," and institute a telephone or call-bell service, similar to that ingenious one in use in the hotels, whereby the guest can have appear at his door anything from a glass of fizz-water to a human being with any peculiar capacity desired. In this way the pointer could be turned to any one of the thousand symptoms of disease, belly-ache, acute vaginismus, paralysis, albuminuria, or hysteria—and lo! there would at once be whisked to one's relief the accurate and infallible machine, human or not human, Hahnemannian, electric or allopathic, the exact drug or potion, all prepared and ready to be shot at or into one, exactly *quantum suf.* and *pro re nata*, to a dot! "All accounts must be settled at the office."

Medical College Consolidation.—The action of the authorities of Rush Medical College and of the College of Physicians and Surgeons, of Chicago, in offering to resign their various positions unconditionally and to sur-

render their property to the liberally-endowed new Chicago University, must be viewed as most significant. With this great school in the West, with the fine plant and the large resources of the Johns Hopkins School at Baltimore, with the consolidation of two of the schools in New York, Philadelphia must look to her laurels, lest she be left in the race. Who shall say that good might not result if the dream of Provost Pepper were realized, that medical students in Philadelphia could, at their option, attend lectures at one or another of the reputable and high-grade schools of the city. The demand of the hour is for higher medical education, and this implies preliminary qualifications, protracted courses of study, unselfishness of administration, and liberal endowment. There is needed a healthful reaction against the petty rivalries and ignoble strifes of institutions supposably working for a common noble end. If the supposed object—the highest and best medical education—were the real and primary object we should hear more of such attempts to gather the weak, selfish, and warring forces into a unity whereby progress in medicine would be admirably furthered, and a silly rivalry be no more the butt of ridicule and public scorn.

Tuberculosis and Life-insurance —It is a very regrettable fact that the vast amount of data in reference to the problems of heredity and preventive medicine that might be elicited from the vital statistics of life-insurance companies is not utilized; and still more regrettable is it that the members of the medical profession connected with these companies do not make better use of their positions and powers to so shape their examinations and records as to throw still greater light on these problems. It would, perhaps, be somewhat of a thankless task on their part, but what downright good work in the world receives proper gratitude and reward? Dr. Lyon recently read before the Hunterian Society, of London, a thoughtful essay on "Phthisis in Relation to Life-insurance," in which we are somewhat surprised to find that medical records contain no adequate data for determining the question of pulmonary tuberculosis in relation to life-insurance, and that the existing theories are founded upon insufficient data. A thorough-going examination of the statistics of insurance offices is urged as highly necessary.

The Medical Education of Missionaries.—The International Medical Missionary Society has asked the New York Board of Regents to empower the Society to grant its students the degree of M.D. after such medical education as it shall deem sufficient to fit them for their work. It seeks to supply a medical course and degree at a less expense than the regular colleges. A less expensive course of study (at the low-tuition rates of our colleges) means, of course, a less thorough course and a more poorly-prepared physician. Worse-qualified physicians and a multiplication of third-rate or tenth-rate medical colleges are things far from desirable. It is difficult to understand why the physician plus the missionary, separated, as he will be, from the aids and supports of civilization, should be less thoroughly equipped for his medical work than the physician who, without theology, practices with physicians and drug-stores, and instrument-makers all about him.

A Cheap Advertisement.—All it costs to have portrait and "biography" inserted in *America Illustrated* is $16.75, and one can write his own puff! The portraits, judging from samples forwarded, are really well done, and we cordially commend the scheme to all eligible "medical men" that find pleasure or profit in being thus advertised. If in enterprises of this character like sketches were printed, concerning those who did not "subscribe" or pay for "engraving," as those who do pay, nothing could be said against any one concerned; it is the restriction of "notice" to those who give *quid pro quo* that makes it advertising, and as such to be avoided by self-respecting physicians.

Medical Students and Medical Sectarianism.—From the forthcoming report of the Bureau of Education Dr. Holmes (*Journ. Amer. Med. Assoc.*, January 14, 1893) epitomizes the statistics of medical education in the United States. In 1890 there were 13,044 students at the regular schools, against 1128 at the homeopathic, and 661 at the eclectic schools. The number of homeopathic students, compared with that of former years back to 1880, is decreasing; the number of the eclectics is slightly increasing, whilst the number of regulars has enormously increased—about 2300—within three years.

Speech Without a Larynx and Without Use of the Lungs.—We are informed by Dr. J. Solis-Cohen that the patient from whom he removed the larynx last April, and whose trachea has been continuously cut off from intercommunication with the mouth, has learned, by practice, to so draw together his palatine folds as to make them subserve the purpose of phonal reeds, which he sets into vibration with the air in his mouth and pharynx. He can thus articulate words and short sentences quite audibly, and at times loudly enough to be distinguished in an adjoining apartment. The voice is phonal, and not a mere whisper.

SELECTION.

MEDICAL EDUCATION.

In 1880, in each 100,000 inhabitants in France, there were 11 students of medicine and 14 students of law. At about the same time, in Germany, there were 8 students of medicine and 11 students of law to the same unit of population. This changed so that in 1888, France had 17 students of medicine and 14 students of law, and Germany had 18 students of medicine and 13 students of law to each 100,000 population.

In 1881, in the United States, there were 25 students of medicine, 6 students of law, and 9 students of theology to each 100,000 inhabitants, while in 1890 there were 24 students of medicine, 7 students of law, and 11 students of theology in the same unit of population.

Relatively a smaller number of medical students have the bachelor's degree than in 1880, though the education of the average medical student is superior to the education of the average medical student ten years ago.

Last summer, many of the college journals gave in the June number the statistics of the graduating class. I selected out seven such compilations and noticed an astonishing series of figures under the caption "Prospec-

tive Calling." Almost 40 per cent. of the June graduates were put down for law, about the same number for theology, while only about 5 per cent. had selected medicine for their future study.

This shows evidently that medicine is not attractive to the college-bred man.

But if medicine is sought by the educated German and is neglected by the educated American, may it not be the fault of the medical schools themselves? Largely I believe it is. This has happened from many and from widely separated causes. Medical education has not been controlled by educators, but by clinicians. The antique methods of the Revolutionary period prevail in the great majority of medical schools to-day. Even in those medical schools that are most intimately connected with State or private universities, other rules and other methods than those of the literary and technological departments prevail. In the report which furnishes the material for this article, we are astonished to find that in one of our university medical schools the course of lectures is so arranged that each student hears every lecture repeated the second year of his attendance and then passes his examination and graduates. Can any educated man endure this, in this last decade of the nineteenth century! The fact is apparent to any student that medical schools are run for the good and profit if not for the glory of the professors. These men want quick returns, and they adapt their instruction to the unevolved mental maws of the students that come in the greatest numbers. Such pap the college-bred man does not relish. To such instruction the university teachers do not recommend men for post-graduate work. To such instruction the American university too often gives its name though withholding its support.

In conclusion, let me make the following deductions:

1. The average course of study in the United States is still less than three years—*i. e.*, eighteen months.

2. The antiquated method of repetition still prevails in the majority of medical schools.

3. The number of students of medicine is absolutely increasing, but (in relation to the population) relatively diminishing. The homeopathic and eclectic schools are hardly holding their own.

4. The education of the average medical student is superior to that of ten years ago, but the ratio of matriculates having degrees in science or art is actually diminishing even in the richest, best located, and only endowed medical schools.

5. The medical department is, so far as we know, neglected by every university in the United States; it is farmed out or left to shift for itself on half rations, or in the best instances, treated from an educational standpoint in an exceptional manner.

6. Medicine is neglected by the benevolent and by the State. From the former it has received almost nothing, and from the latter not a tithe of what has been lavished on technological schools, and this in spite of the fact that the State and all benevolent institutions have put a heavy task of gratuitous and often compulsory service on the medical profession.

7. The medical schools are wasting their substance by keeping their doors shut half the year, and they are degrading the profession by allowing uneducated men to matriculate and uncultured men to graduate.

8. The laws which allow the diploma to become a license to practise, but the short-term-no-requirement schools in a position to dictate to the schools that offer a medical education in place of a degree.—BAYARD HOLMES (*Journal of American Medical Association*, January 14, 1893).

NEWS ITEMS.

The U. S. Marine-Hospital Service.—A board of officers will be convened at Washington, March 20, 1893, for the purpose of examining applicants for admission to the grade of Assistant Surgeon in the U. S. Marine-Hospital Service.

For information or invitation to appear before the board of examiners, the Supervising Surgeon-General, Dr. Walter Wyman, Washington, D. C., should be communicated with.

The Section on Laryngology and Rhinology of the Pan-American Medical Congress, it is announced, is now thoroughly organized, with secretaries in all the countries of South America, as well as in the United States and Canada. Dr. J. Maron y Alonso, of Las Vegas, N. M., is the Spanish-speaking secretary, and Dr. T. Morris Murray, of Washington, D. C., is the English-speaking secretary, with whom physicians interested in this section are invited to correspond.

Ohio State Association of Railway Surgeons.—An invitation is extended to all railway surgeons of the State of Ohio to attend a meeting to be held on March 17th, at 9 A.M., in the amphitheater of the Ohio Medical University, at Columbus, for the purpose of organizing a State Association. Intending participants are requested to send their names to the secretary, Dr. C. H. Merz, Sandusky, Ohio.

The Cholera in Marseilles.—Dr. Robin, of Paris, has written the New York *Herald* that the epidemic in Marseilles, about the exact nature of which there has been considerable doubt, is in his opinion genuine cholera, but that there is no immediate danger of a spread of the disease from this point as an infecting center.

Addition.—By an inadvertence the name of Dr. Middleton Michel, of Charleston, was omitted from the list of members elected at the last meeting of the Association of American Anatomists, as published in THE NEWS of January 28, 1893, p. 109.

The American Practitioner and News is to be congratulated upon its greatly improved appearance. Its dignity and usefulness would be still further increased by omitting advertisements from its reading-columns.

Prof. Otto Kahler, the occupant of the chair of clinical medicine, associated with the second medical clinic in the University of Vienna, died January 25th, forty-four years old, of carcinoma of the tongue.

The Missouri Valley Medical Society will hold its next meeting at St. Joseph, Mo., March 16th. A cordial invitation is extended to the members of the profession to attend.

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ORIGINAL ARTICLES.

REPORT OF SEVEN CASES OF RUPTURE OF THE URINARY BLADDER, WITH OBSERVATIONS ON DIAGNOSIS.[1]

BY JAMES B. HERRICK, M.D.,

PROFESSOR OF THE PRACTICE OF MEDICINE AND THERAPEUTICS, WOMAN'S MEDICAL SCHOOL, CHICAGO; ADJUNCT PROFESSOR OF MEDICINE, RUSH MEDICAL COLLEGE, CHICAGO.

OF the following cases, I myself saw the first three and assisted in their treatment. I am indebted for the privilege of reporting these three to Drs. T. J. Conley, Bayard Holmes, and C. W. Earle, in whose hospital or private practices they occurred. Dr. Henry F. Lewis furnished me with the facts concerning Case IV, and Dr. Ludvig Hektoen, with those of Case VII. Cases V and VI occurred in the Cook County Hospital service of Dr. W. F. Knoll, by whom the histories were kindly placed at my disposal. I desire to thank all these gentlemen for their courtesy in thus enabling me to get together these interesting cases.

CASE I. *Traumatic rupture of the bladder; peritonitis; celiotomy; death.*—John D., aged twenty-eight, a well-developed, muscular man, was admitted to Cook County Hospital on the afternoon of May 31, 1889, in the service of Dr. T. J. Conley. He gave a clear, intelligent history of having been kicked in the supra-pubic region by a horse, twenty-four hours before. At that time he had not been intoxicated. He had urinated four hours before receiving the injury. Since then he had not passed a drop of urine himself, though a physician had withdrawn by catheter a "cupful of bloody water" five hours before the patient entered the ward. He complained of quite severe abdominal pain and of nausea. He was vomiting when admitted, the face was flushed, the skin not clammy, the mind clear. The breathing was rapid and almost entirely thoracic; the pulse 120, regular, quick, and the temperature 100° F. The abdomen was moderately tympanitic, the muscles tensely contracted, and there was an absence of hypogastric dulness. There was neither desire nor ability to expel urine. By the catheter a few drops of bloody fluid were obtained, and pressure over the abdomen forced out about a dram more. With the sound, no abnormal opening in the bladder could be discovered. Rectal examination revealed no fracture of the pelvic bones. Intra-peritoneal rupture of the bladder was diagnosticated, and as a confirmatory test 600 c.c. of boric acid solution were injected through the urethra, of which but 100 c.c. were recovered. Though previous to the introduction of the solution of boric acid, a Barnes dilator had been introduced into the rectum, no increase in dulness was noted in the hypogastrium, such as would have been found had the bladder held the fluid and been lifted against the anterior abdominal wall by the dilator.

Twenty-three hours after the reception of the injury, abdominal section was made and a linear rent in the posterior vesical wall near the fundus was repaired by suture. The parietal and visceral peritoneum showed injected vessels, loose adhesions, and an abundant flaky fibrinous exudate. Abdominal flushing and drainage were carried out.

Urine was voided voluntarily five hours after the operation, and again five hours later. During the remaining twelve hours of life no urine was obtained by voluntary micturition or by the catheter. Death followed at eight o'clock on the morning of June 1st, forty-nine hours after the injury, and twenty-four after the operation.

Immediately after death the abdominal wound was opened. The stitches in the bladder were almost concealed from view by the exudate covering the line of the wound. The bladder held without leakage a pint of water. There were general peritoneal adhesions, and there was a small amount of slightly fetid fluid in the lowest portion of the abdominal cavity.

CASE II. *Traumatic rupture of the bladder; celiotomy; septic peritonitis; death.*—(Service of Dr. Bayard Holmes, Cook County Hospital.) M. F., an adult male, on the morning of July 10, 1889, while intoxicated, fell a distance of twelve feet, striking on the feet and left hand, and cutting the chin. He immediately felt considerable pain in the abdomen, which grew steadily more severe. He evacuated both bladder and rectum an hour after the injury, but did not notice the character of the excreta. The patient was sent by the examining physician to the ward for minor surgery, where the wounds were attended to by the nurse. In the evening the interne, noticing a tense and tender abdomen and dulness in the hypogastric and left inguinal regions, inserted a catheter and drew off a pint and a half of dark bloody fluid, which flowed in quite a steady stream and coagulated soon after withdrawal. At 10 P.M., under ether, no pelvic fracture was detected. A sound passed by the urethra revealed a roughness in the fundus of the bladder. Celiotomy was performed, and a ragged rent, two inches in length, was discovered in the fundus, a little to the right of the median line, and just beyond the place of deflection of the peritoneum over the bladder. The lower half was sutured, and the margins of the anterior half were stitched to the

[1] Read at the meeting of the Pathological Section of the Chicago Academy of Sciences, December 1, 1892.

lower angle of the abdominal wound. A rubber drain was inserted into the bladder.

In spite of what seemed to be delirium tremens, and a general septic peritonitis (the latter confirmed by autopsy), the patient lived four and a half days after the operation.

CASE III. *Traumatic rupture of the bladder; peritonitis from catheter-infection; death.*—On the evening of May 18, 1890, there was brought to Dr. C. W. Earle's hospital for inebriates, a man who for several days had been drinking heavily. About ten o'clock on that evening, I saw him and had no suspicion of anything more than ordinary drunkenness. The next morning the nurse said the patient had complained of severe pain during the night, and had often gone to the closet to urinate. The man, who was now sobering up, could not remember when he had last urinated, though he said that during the night he had frequently felt the desire to empty the bladder. Suspecting retention of urine, I introduced a metal catheter (about No. 10, American), which passed readily, meeting no obstruction, and there escaped a dark, reddish fluid, containing, as shown by microscopic examination, a large number of red blood-corpuscles. The stream was an interrupted one, varying in the distance it was thrown from the catheter's end with the movements of respiration, and thrown, when the muscles of the abdominal wall were brought into play in the efforts of the patient to force out the fluid, for at least four or five inches. In this way, and by pressure upon the abdominal wall, something more than a quart of bloody fluid was withdrawn. There was dulness on percussion, now only faintly preceptible in the flanks, while before it had been noticeable near the median line, though before catheterization there had been no flatness on percussion made out, nor any rounded mass, such as the distended bladder gives rise to.

The history of the patient was valueless, as he remembered nothing of the events of the preceding days. The remains of a recent bruise were discovered on the right knee, and a friend reported that on the 17th a physician had been called, who prescribed for severe abdominal pain. No history of injury was obtainable. The temperature at the time of catheterization was 99° F., and the pulse 120. Rupture of the bladder was diagnosticated. A consultant advising against operation, the patient was put on stimulants, and kept quietly in bed.

The urine was frequently drawn by the nurse and always escaped when the patient brought the abdominal muscles into play, or when pressure was made over the abdomen, both of which actions caused no pain. The temperature never rose as high as 100° F. Gradual failure in strength occurred, and the patient died on the morning of May 21st, fifty-four hours after admission to the hospital and about four days after having been seen by the physician who prescribed for the severe abnominal pain.

A post-mortem examination was made twelve hours after death. The skull was not opened, and examination of the chest was negative. About one pint of clear, blood-tinged fluid was found free in the abdominal cavity. The visceral and parietal peritoneum presented a normal naked-eye appearance, except in the lower abdomen, where, in the most dependent position as the body lay on the back, *i. e.*, next the posterior wall of the abdomen, there were injection of vessels and a very few loose adhesions between the coils of the intestines, and a slight amount of fibrinous deposit. The posterior wall of the bladder showed a gaping wound, with irregular edges, extending from above downward and to the left, over two inches, and involving all the coats of the viscus. Other organs gave negative results, save that one kidney showed the changes incident to chronic interstitial nephritis.

CASE IV. *Extra peritoneal rupture of the bladder; abscess; death.*—The patient was admitted to Cook County Hospital moribund, with no history obtainable, save that he had been ill for several days with pain in the lower abdomen. He died in a few hours, no ante-mortem diagnosis having been made. The autopsy showed extra-peritoneal rupture of the bladder and localized suppuration.

CASE V. *Fracture of the pelvic bones; extra-peritoneal and intra-peritoneal rupture of the bladder; death.*—(Cook County Hospital, service of Dr. W. F. Knoll.) Maggie M., twenty-eight years old, fell thirty feet on January 13, 1891. Immediately brought to the ward, she was unconscious, breathing heavily and rapidly, bleeding from the ear, and with a feeble pulse. Three ounces of bloody urine were drawn by the catheter. But two-thirds of a solution of boric acid, injected into the bladder, could be recovered.

Incision over the arch of the pubis revealed laceration of the anterior wall of the bladder, and through this a laceration of the posterior wall could be diagnosticated. A comminuted fracture of the pubic bone gave a ready explanation of the damage to the bladder. Bloody fluid was extravasated into the pericystic cellular tissues and into the peritoneal cavity. The wounds were repaired, the patient taking the anesthetic poorly. She never regained consciousness and died on the evening of the same day. No autopsy was permitted.

CASE VI. *Extra-peritoneal rupture of the bladder; operation; death on the fifth day.*—(Cook County Hospital, service of Dr. Knoll.) M. K., an adult, painter, was admitted February 10, 1891. A mass of iron had struck him on the left groin and left side of the pelvis. On admission the general condition was good. There was swelling along the line of Poupart's ligament on the left side, from the root of the penis to a point two inches above the anterior superior spine. There was inability to urinate. One ounce of bloody fluid was withdrawn by the catheter. Injection of solution of a boric acid caused increase in size of the swelling, and none of the solution was recovered.

Incision in the median line, as in supra-pubic lithotomy, showed a fracture of the body and ramus of the os pubis, extravasation of bloody urine and boric solution. As the seat of the rupture was out of reach, a lateral perineal incision was made and a rent at neck of the bladder was discovered.

The patient lived for five days, with rapid pulse, averaging 130, and a temperature ranging from 99°

F. to 102° F. He complained of but little pain; the wounds were of a healthy appearance, the dressings always freely soaked with urine. On the morning of the fifth day a severe chill occurred, with rise in temperature, delirium, collapse, and death at 10.30 P.M. No autopsy was permitted.

CASE VII. *Traumatic intra-peritoneal rupture of the bladder complicated by uterine fibroids and cerebral hemorrhage; death after nine days; no peritonitis.*—A woman, thirty-five years old, suffering from severe pain in the head, was admitted to hospital on June 11, 1892. During the afternoon she had a fainting spell, and at about this time was kicked in the abdomen and beaten over the head with a broom by her drunken husband. On June 14th a physician found her suffering with severe headache and unable to answer questions. On the following night she walked about the room screaming, and on the 20th she died, without the development of any new symptoms.

The post-mortem examination, made twenty-four hours after death by Dr. Hektoen, who reports the case, showed no external mark of violence. The abdominal cavity contained three and one-half quarts of clear, limpid fluid with a urinous odor. The peritoneum was smooth, shining, and showed no evidence of peritonitis.

In the posterior wall of the urinary bladder, near the fundus, was a transverse tear, one and one-half inches long, with ragged margins free from any signs of inflammation, and showing on the mucous surface a few superficial continuations at the end of the total tear; the viscus was empty, the mucous membrane smooth, the walls apparently thin. The uterus contained three sub-serous fibro-myomata, the largest of a diameter of four inches, the pelvis being filled up. Heart, lung, kidneys, liver, spleen, showed no changes bearing upon this lesion.

In the left frontal lobe of the brain was a blood-clot, the size of a hen's egg, in a cavity lined with softened yellowish detritus. The pia mater in the longitudinal fissure was infiltrated with blood; the brain otherwise healthy.

REMARKS.—Out of a total of about eight thousand surgical cases in Cook County Hospital since 1889, five have been proved to be instances of traumatic rupture of the bladder. Two of the seven cases here reported were not diagnosticated before drath. This frequency of occurrence and failure to diagnosticate render it probable that the accident happens more frequently than is generally supposed. The *St. Bartholomew's Hospital Report* for 1869–75 mentions but two instances of injury to the bladder out of a total of 16,711 surgical cases.

The cases here recited are instructive, not so much from the point of treatment as from that of diagnosis. Incision and repair of the wound in intra-peritoneal rupture, and repair of the wound when possible, with drainage, in extra-peritoneal rupture, are probably regarded to-day as the rational treatment.

The history of a trauma can usually be obtained. If the patient himself, on account of intoxication, cannot remember an injury, bruise-marks can often be discovered, as in Case III, pointing to blows or falls. These may, however, be lacking, as in Case VII. In Case I, too, there was discovered only a slight area of subcutaneously extravasated blood when the abdominal incision was made. In rupture of the healthy bladder traumatism is to be assumed. When a weakness of the coats of the viscus exists, as from tuberculous or malignant disease, or from inflammatory changes in the wall of the bladder, or in its neighborhood, over-distention without trauma may cause rupture. Some, as Pousson, believe that an over-distended healthy bladder may rupture spontaneously. That drunkenness is an important etiologic factor is well known. It furnishes the abundant secretion of urine; a paretic, and consequently distended, bladder, which rises above the pelvic brim, where it is exposed to injury; and a relaxed abdominal wall, so that the force of any blow, to which a drunken man is especially liable, be it from a kick, a heavy weight, or a fall, comes with unchecked vigor upon the viscus with walls tightly stretched. In Case VII, as Dr. Hektoen points out, the enlarged uterus constituted a resisting body against which the bladder would be forced by the kick. A slighter blow might here suffice to cause rupture, and especially as the bladder, though not containing much urine, would be lifted by the uterus high in the pelvis.

Two of these seven cases occurred in intoxicated persons. In three, intoxication was not present. In one, the history in this respect is lacking. In Case VII rupture occurred probably some time after a cerebral hemorrhage, when the bladder can easily be assumed to be distended.

Drunkenness is not only an important element in etiology, but it tends to mask otherwise plainly-marked symptoms. The severe pain and the phenomena of shock, so commonly present, may, in an intoxicated person, be but slightly, if at all, marked. The inability to urinate in response to urgent desire, which condition is so characteristic of rupture in a person with unclouded intellect, is often overlooked in these cases by the patient, and, consequently, by the physician. When it is discovered the physician naturally passes the catheter and obtains no urine, or bloody urine.

I desire to call attention to one fact very strikingly illustrated by two of these cases. In Cases II and III there was a free discharge of fluid on the introduction of the catheter. In Case II, Dr. H. F. Lewis, who reports it,[1] says: "The catheter drew about a pint and a half of dark, bloody fluid, which flowed normally after withdrawing the point a short distance and re-introducing." In Case III, a quart

[1] The North American Practitioner, September, 1889.

of bloody fluid was withdrawn in a full stream, which, when the patient strained, was thrown four or five inches from the end of the catheter. The explanation of this occurrence seems to be that in both these cases the rent in the bladder wall, as was shown by ante-mortem and post-mortem examination, was so large that the catheter passed directly into the abdominal cavity, which contained the fluid. Pressure was made by voluntary contraction of the abdominal walls and diaphragm, just as is so often done by a patient when tapped for abdominal ascites. The diaphragm and abdominal muscles were readily made to contract, because at this time, at least in Case III, there was no peritonitis, causing the involuntary fixation of these muscles in order to avoid pain. This point, that when the rent is large, and especially when there is no peritonitis, bloody urine may be obtained in quantity and in a stream, seems worthy of careful consideration, as it is generally stated that no urine, or only a few drops of bloody urine, can be obtained by the catheter. Greig Smith, for instance, in his excellent article, says: "Only blood, or blood and urine, escapes in drops, and the patient gets no relief" (from catherterization).[1] The fact that in Case III the urine flowed, decided, at a consultation, against the diagnosis of rupture of the bladder, and hence against operation.

That peritonitis is not an inevitable consequence of rupture of the bladder is not only known by *à priori* reasoning, on the ground that aseptic urine will not produce peritonitis, and from well-known experiments, but is also clearly shown by these cases. Case III had no sign of peritonitis until he had been catheterized, and this by at least five different persons, and with poor or no antiseptic precautions. The autopsy showed commencing peritonitis in one place only, and that the most dependent portion of the abdominal cavity, when the patient was in the dorsal position, which he kept after the catheterization. Before that he had been up and down, and urine must have bathed all parts of the peritoneum; yet no peritoneal inflammation existed except where the infection by the catheter had taken place.

No case is more positive and instructive, however, than Case VII; here no catheterization had been performed, urine had accumulated in the abdominal cavity for nine days, and yet there was no peritonitis.

We can explain on no other ground than non-existence of early peritonitis the case of Harrison, in which the patient on the day after the rupture walked three miles to be catheterized, and kept at work three days more, emptying the bladder voluntarily. Only on the fourth day did symptoms of peritonitis develop, with death on the eighth day. There were local peritonitis and sac-formation by adhesions.[1] Gillespie reports a case in which, three days after the injury, a patient entered the hospital to be catheterized. Death occurred ten days later. The autopsy showed a ruptured bladder, intra-peritoneal extravasation of urine, and slight peritonitis.

The importance of being careful in catheterizing a patient with suspected damage to the bladder is emphasized by these cases. A septic catheter used for diagnosis may spoil the favorable result of a faultlessly aseptic celiotomy for the repair of the bladder-wound.

In four of these cases the injection of a solution of boric acid, with failure to recover a large part of the fluid injected, confirmed the diagnosis. The exploration of the hypogastrium in all these cases failed to reveal the physical signs of a distended bladder. When enough fluid is injected in this way the ordinary physical signs of abdominal ascites are obtained. In Case VI, the fluid escaping through an extra-peritoneal tear caused the swelling along Poupart's ligament to increase in size. Sterilized water would answer the mechanical purpose and avoid the risk of poisoning from retention and absorption of the boric-acid solution, and would not be as irritating to the sensitive peritoneal pericystic tissue. Keen[2] advocates, as an aid in establishing the diagnosis of intra-peritoneal rupture of the bladder, the introduction of sterilized air *per urethram*, after the analogy of the Senn rectal insufflation. This should give positive aid in extra peritoneal rupture, if there be swelling, tympanites on percussion, and the tissues be emphysematous on palpation. It might have the advantage, too, over the fluid, of escaping through small openings that were closed against fluid by a valve-like flap of membrane, inflammatory exudate, or hernial protrusion of intestine into the bladder.

The attempt has not been made to discuss at length the diagnosis of rupture of the bladder, but rather to give emphasis to some points that are exemplified by these cases.

The following conclusions seem warranted by the observation of the cases reported:

1. The absence of a history of a trauma or of external evidence of violence in the supra-pubic regions does not exclude traumatic rupture of the bladder.

2. When the rent is large, urine may escape from the catheter in a full stream.

3. When the rent is small and covered by free exudate, urine may likewise escape normally. (Ultzmann.)

4. Peritonitis does not necessarily follow rupture of the bladder.

[1] Abdominal Surgery, 4th ed., p. 752.

[1] Quoted by Ultzmann: Die Krankheiten der Harnblase, 1890, p. 70.

[2] Annals of Surgery, September, 1890.

5. This being so, in a suspected case extreme caution as to asepsis should be observed in catheterization.

6. As an aid in diagnosis the injection of a measured amount of warm sterilized water is in all cases to be tried, the abdomen subjected to careful physical examination before and after the injection, and the amount recovered by the catheter carefully noted. A Barnes dilator in the rectum will aid in lifting the bladder out of the pelvis against the abdominal wall.

7. Hydrogen gas or air may be substituted for water.

8. All injections should be under moderate pressure, as by high pressure an incomplete rupture might easily be converted into a complete one.

9. In all cases of fracture of the pelvic bones rupture of the bladder is to be sought, and *vice versa*, in all cases of rupture of the bladder examination per rectum, etc., must be made for fracture of the pelvis.

10. Extra-peritoneal rupture may be complicated by intra-peritoneal rupture. (See Case VI, in which apparently a spicule of bone made a through-and-through perforation.)

11. Supra-pubic cystotomy or opening of the abdominal cavity in suspected extra-peritoneal rupture is justifiable in order to confirm the diagnosis and to locate the point of rupture, so that drainage can be properly applied.[1]

SOME NOTES UPON URINALYSIS.

BY P. MAX FOSHAY, M.D.,
OF CLEVELAND, OHIO.

IN the course of examining urines I have found that certain data, of which the analyst stands much in need, are not to be met with in any of the works upon urinalysis with which I am conversant, and I have examined, I think, all the manuals in general use. For instance, the average daily amount of total solids in the urine of healthy persons is given by all authors; but a statement as to what range of total solids is compatible with health is made by few, and then not in a satisfactory form. The average amount of solids is usually stated to be 70 grm. a day, but I am of the opinion that this is slightly too high for the average men and women in this country, and think 63 grm. would fall nearer the true average. The specific gravity in health may range from 1.015 to 1.025, the average being 1.020. The quantity of urine passed daily by healthy persons is said to vary from 1300 to 1500 c.c. The Haeser and Neubauer formula for estimating total solids from the specific gravity is sufficiently accurate for clinical purposes. This is executed by multiplying the last two figures of the specific gravity by the factor 2.33, the product of which represents the number of grams of solids in 1000 c.c. of the urine, and must be multiplied by the number of cubic centimeters of the urine under examination, and divided by 1000 in order to obtain the correct amount of solids. Taking this factor and the averages of specific gravity and quantity, we readily arrive at the following results for the health-range of total solids. Employing first the minimum specific gravity and maximum quantity, we have:

$$\frac{2.33 \times 15 \times 1500}{1000} = 52.43 \text{ grm. for the minimum solids.}$$

Using next the maximum specific gravity and minimum quantity, we have:

$$\frac{2.33 \times 25 \times 1200}{1000} = 69.90 \text{ grm. for the maximum solids.}$$

In calculating the maximum and minimum of total solids, I took as a basis the most usual conditions of healthy urine, *i. e.*, maximum quantity associated with minimum specific gravity and *vice versa*. But as there might be cases in which, along with apparent health, the maximum specific gravity is maintained simultaneously with maximum quantity, and *vice versa*, it seemed advisable to determine these widest possible limits of the health-range of total solids, as follows:

$$\frac{2.33 \times 15 \times 1200}{1000} = 41.94 \text{ grm.}$$

$$\frac{2.33 \times 25 \times 1500}{1000} = 87.38 \text{ grm.}[1]$$

In actual examination of urines it will be found that those whose total daily solids persistently approximate to either of these extreme figures represent some deviation from the normal standard of health. Whether a given case is pathologic or not must be determined by noting carefully all the conditions of the patient's environment; whether his diet is liberal or scanty; whether his habits are active or sedentary; the climate and season of the year, and, in addition, sex and weight are important factors in the problem. From my own experience I should say that the first determined limits, viz, from 52.43 to 69.90 grm., are much the safer ones to use in practice.

The ratio which the amount of urea in a sample of urine bears to the amount of total solids has seemed to me to be of some interest and value. Little is

[1] On the Value of Exploratory Laparotomy in Suspected Extra-peritoneal Rupture. *Vide* Cabot: Boston Med. and Surg. Journ., October 15, 1891.

[1] Note the concordance between the average amounts of solids as determined from each of these limits:

$52.43 + 69.90 \div 2 = 61.17$ grm.

$41.94 + 87.38 \div 2 = 64.66$ grm.

An average of these two amounts is 63.42 grm.

said concerning it in the manuals; but I have observed it in an extended series of experiments. It should first be remarked that all my figures are upon the basis of the whole twenty-four hours' urine, and all my examinations, with a few unavoidable exceptions, are made upon the total daily quantity. In estimating urea I use the hypobromite method exclusively, as being, upon the whole, the most satisfactory, and I make a fresh solution of hypobromite of sodium for each and every determination. I use the ureometer devised by Dr. Charles Doremus as the cheapest (for they will get broken), simplest, most readily cleaned, and, in general, the instrument best adapted for use in the physician's office; while at the same time I am confident that the ureometer of Dr. John Marshall is more scientific, more accurate, and better fitted for the use of the chemist. The daily amount of urea excreted in health may range from 20 to 40 grm., according to diet, the average of these figures being 30 grm. I am, however, very much inclined to think that 27 grm. daily is as high an average as the analyst will make in this country. Using our previously-calculated average limits for total solids, we find the limits of the ratio between urea and solids to be as follows:

$\frac{52.43}{20} = 2.6$, or a ratio of urea to solids as 1 : 2.6.

$\frac{69\ 90}{40} = 1.7$, or a ratio of urea to solids as 1 : 1.7.

Here I have employed minimum figures of solids and urea, and *vice versa*, as, of course, we almost invariably find them associated in nature. Taking minimum urea with maximum solids, and *vice versa*, as rarely occurs in health, and never persistently, the ratios will be as follows:[1]

$\frac{69.90}{20} = 3.5$, or a ratio of urea to solids as 1 : 3.5.

$\frac{52.43}{40} = 1.3$, or a ratio of urea to solids as 1 : 1.3.

From these two groups the average ratios will be calculated, as follows:

$2.6 + 1.7 = 4.3 \div 2 = 2.2$ or a ratio as 1 : 2.2

$3.5 + 1.3 = 4.8 \div 2 = 2.4$ or a ratio as 1 : 2.4

Hence we may conclude that the average ratio of urea to solids in healthy urine is as 1 : 2.3, but that there may be a range, dependent wholly upon diet, of from 1 : 1.5 to 1 : 3.0. And I should say from somewhat extended observation upon this point, both in normal and pathologic urines, that a urine in which the ratio of urea to solids remains persistently at either the maximum or minimum figure is not excreted by a person in thoroughly good health. As far as my experiments have gone, the most notable fact to be observed concerning this ratio in the urine of persons suffering from various diseased conditions is its extreme variability from day to day, in this respect differing markedly from the ratios in healthy urines. I should not at present attribute great diagnostic value to this ratio, but in every case I meet it furnishes valuable collateral evidence.[1]

The ordinary volumetric methods of estimating phosphates and chlorids, while they are accurate and not difficult of execution for one who has plenty of time at his disposal, are yet out of reach of the average practitioner of medicine. Yet he would many times profit by the knowledge of the approximate amount of these substances in his patient's urine; so that I have endeavored to improve upon the rough methods of estimation given by most authors. I have not yet proceeded far enough in my experiments to be certain of the value of the method I propose, but, every time that I have checked it by the volumetric methods, it has furnished results sufficiently accurate for the physician's purpose. It is to be borne in mind that the knowledge of the exact amount of chlorids and phosphates in a urine is of no practical value to the physician. If he knows whether these substances are present in increased or decreased quantity, he possesses all the knowledge that he can apply in the present state of our science. The method I use is not new, but I am not aware of its application to the estimation of these salts in urine, though I doubt not it may have been so employed. I venture a hope that some physicians may find the method serviceable.

The necessary reagents are: The same solution of silver nitrate that is used in the volumetric estimation of chlorids (though any dilute solution will answer); a solution of a chlorid (preferably NaCl) of such strength as to represent the average proportion of chlorids in normal urine; and a simi-

[1] Upon the basis of extreme limits of variation of solids the ratios might be figured as follows:

$\frac{41.94}{20} = 2.1$, or a ratio of urea to solids as 1 : 2.1.

$\frac{87.38}{40} = 2.2$, or a ratio of urea to solids, as 1 : 2.2.

The converse $\left(\frac{41.94}{40} = 1.05 \text{ and } \frac{87.38}{20} = 4.4\right)$ is impossible.

[1] For normal urine the following averages are those given in the books for the twenty-four hours' quantity:

Average specific gravity	1.020
" quantity	1350 c.c.
" total solids	70 grm.
" urea	30 "

From this we find an average ratio of urea to solids of 1 : 2.33 $\left(=\frac{70}{30}\right)$. As 63 grm. seems a better figure for average solids, and 27 grm. a more correct average for urea, the corrected ratio will be 1 : 2.3 $\left(=\frac{63}{27}\right)$.

And note that the average amount of total solids calculated from these very figures (quantity 1350 c.c. and specific gravity 1.020) differs from that stated in the table, as follows:

$$\frac{2.33 \times 20 \times 1350}{1000} = 63 \text{ grm.}$$

lar solution of a phosphate (preferably Na_2HPO_4).[1] One-half dozen ordinary stand test-tubes and a graduated pipette constitute the necessary apparatus. The principle of the method is the comparison of the relative bulk of the precipitates formed by adding the silver solution to the normal solutions, with similar precipitates formed by adding the silver solution to the urine. In estimating the chlorids I at present employ 1 c.c. of the sodium chlorid solution diluted to 5 c.c. in a stand-tube with distilled water, and 1 c.c. of the urine to be examined similarly diluted, to which is added one drop of nitric acid to prevent precipitation of the phosphates. Then 1 c.c. of the silver nitrate solution will completely precipitate the chlorid in the standard solution. Add silver solution to the diluted urine until the precipitate no longer forms, and shake both tubes thoroughly. In two or three minutes the comparison of the relative bulk of the precipitates may be made, and will give a fair estimation of the deviation from normal, if there is any, of the chlorids in the urine. This method is very easy of execution, the required solutions keep well, and it furnishes, so far as tested, fairly approximate results.

In roughly determining the phosphates I add 1 c.c. of the sodium phosphate solution to 1 c.c. of the sodium chlorid solution (as the chlorids and phosphates in the urine are necessarily precipitated together) and dilute to 5 c.c. with distilled water. As before, dilute 1 c.c. of urine to 5 c.c., and then add excess of silver solution to each tube, and shake. A mixed precipitate of silver chlorid and silver phosphate falls in each tube, and, as we already know the relative amount of chlorids in the urine, any change from that relation will denote the deviation in amount of phosphates from the normal. I am free to confess that the application of this method to the phosphates is not yet nearly so satisfactory as it is in the case of the chlorids.

Sometimes the analyst receives a sample of urine which is twenty-four hours old, or more, and it would be of great value to know approximately what changes, if any, had taken place in the urine since it was voided, either in specific gravity or amounts of urea and phosphates. The manuals furnish no information upon the point. I have only been able so far to try the effects of time upon the specific gravity and amount of urea, and then not in a sufficiently extended series of experiments to give authoritative results. Taking them for what they are worth, I note the following, and I select one case of each, rather than make an average. On a Sunday the specific gravity of a sample of fresh, warm urine (50 c.c.) was taken and found to be 1.018. When cold it read 1.022, and four days later it was 1.023. The evaporating surface was only three-fourths of an inch in diameter.

In a beaker, three inches in diameter, were placed 200 c.c. of fresh urine. An estimation of urea was made at once, and upon every succeeding day, for seven days. When fresh, the urea amounted to 0.020 grm. in 1 c.c., or 24 grm. in 1200 c.c. On the fourth day it was 0.022 grm. urea to 1 c.c., or 26.40 grm. in 1200 c.c.; and upon the seventh day, 0.0234 grm. in 1 c.c., or 28.08 in the 1200. On the last day the urine was brought to the original bulk by adding distilled water, and then the urea read 0.018 grm. in 1 c.c., or 21.6 grm. in 1200 c.c. The result shows an apparent gain due to evaporation of 4.08 grm. of urea, but a real loss of 2.4 grm. due to decomposition of the urea. It is worthy of note that I find little actual change, except by evaporation, if that is not prevented, in most urines during the first forty-eight hours.

These facts are not sufficiently borne in mind, for I have seen an insurance examiner many times take the specific gravity of a warm, freshly-voided sample of urine and report the result as representative, which it certainly was not.

[1] Formulas:

1. *Silver nitrate solution.*	2. *Chlorid solution.*	3. *Phosphate solution.*
$AgNO_3$ 7.265 grm.	NaCl 3.25 grm.	Na_2HPO_4 0.95 grm.
Water 250 c.c.	Water 337.5 c.c.	Water 337.5 c.c.

MASTOID ABSCESS.

BY S. P. SCHROEDER, M.D.,
OF HOYLETON, ILL.

MASTOID inflammation is a complication of suppurative inflammation of the middle ear, but of such gravity and so serious that it might be called a separate disease.

Anatomically the mastoid process lies posterior and external to the petrous portion of the temporal bone. It is composed of cavities, in the healthy state intersected and subdivided by partitions. These cavities open into the tympanic cavity. In suppurative inflammation of the tympanic cavity the inflammatory process may extend into these cells, and once the pyogenic cocci have found entrance and lodgment in these caves, it is easily understood that it will be a hard fight on the part of the physician to get them out of their fortifications. On the inner and posterior side of the mastoid process is found the sigmoid groove, the continuation of the lateral sinus. This groove stands in danger of being injured when the mastoid process is opened.

The causes of suppurative inflammation of the middle ear may be summarized as follows: 1. Cold. 2. Injuries—(*a*) The forcible removal of foreign

bodies, chief of which is impacted cerumen. (*b*) The forcible injection of fluids. 3. The infectious diseases, among which scarlet fever takes first rank. The pathology of mastoid abscess is that of other bone-inflammation. There may be softening, sclerosis, caries, or necrosis.

The accidents, as they may be called, consist in the extension of the inflammatory process to neighboring parts, which occurs in two ways: (*a*) By extension along the vessels and natural openings, and (*b*) by forming a fistulous opening by caries through its bony walls. The inflammation may extend outward, inward, upward, downward, or forward.

When the inflammation extends *outward* it will show itself by edema, redness, and deep tenderness over the mastoid process, and the ear will stand farther from the head than its fellow. If left to open itself, the abscess is slow in its progress, and when it opens the pus is offensive in odor. If the inflammation extends *inward* it will be recognized by symptoms caused by phlebitis, thrombosis, and embolism of that portion of the cranial cavity that is drained by the lateral sinus and the superior and inferior petrosal sinuses. Hence there would be edema of the corresponding side of the face, mastoid prominence, and head, due to the obstructed return-circulation. There may be high fever and vomiting.

If the inflammation extend upward there will be symptoms due to meningitis, as for example, severe headache, not localized, restlessness, fever, vomiting, irregularity of pulse, coma, and death; while, if cerebral abscess should form, I take it the symptoms would be so obscure that they could not be differentiated from those of meningitis, and the diagnosis could only be positively made in the post-mortem room.

If the inflammation extend downward, the pus would gravitate into the retro-maxillary fossa, and from there downward along the cellular plains in connection with the great bloodvessels of the neck. If the inflammation extend forward, an abscess is formed on the posterior wall of the external auditory canal, which, after it opens, leaves a sinus, and from its external opening large granulations spring up resembling polypi.

I shall give the history of a case that had three of these accidents: Periosteal mastoid abscess, extension of the inflammation into the external auditory canal, and very probably cerebral abscess. It also shows the ravages of this affection:

CASE I.—In March, 1889, I was called to see J. McCairy, a farmer, and a native of Ireland, aged seventy years, remarkably stout for his age, who complained of pain in the left ear, which radiated over the corresponding side of the head and face. He had suffered from pain about five days. There was slight fever. Otoscopic inspection revealed a red zone around the attachment of the tympanic membrane, and a red line where the handle of the malleus was located. The membrane was bulging outward, and had lost its luster. There was deep tenderness of the mastoid process. I recommended paracentesis of the tympanic cavity. This he objected to. Two days afterward, however, the patient permitted me to incise the membrane. At this time, however, the external auditory canal was so swollen that it was well-nigh impossible to get a clear view of the membrana tympani. There was some edema over the mastoid prominence, and the ear stood farther from the head than its fellow. I warned him of the gravity of the case, which scared him, and the next I knew he was attended by another physician. After four weeks I was called to take charge of the case again. As soon as I entered the sick-room I observed that the left side of his face was completely paralyzed. The eye of the corresponding side was kept constantly open, even during sleep, contrasting strongly with the facial paralysis due to a central lesion of the cerebrum, in which the upper fibers of the facial nerve are not implicated. The paralysis affected his speech so that it was almost impossible to understand him. It seemed as though the tongue was too large and thick. The soft palate was drawn over to the opposite side; he had difficulty in swallowing, and taste on the corresponding side was deficient. There was a large periosteal abscess over the mastoid eminence, which fluctuated. I opened it, and considerable offensive-smelling pus passed out. On probing I found a fistulous opening in the mastoid process. There was discharge of pus from the ear. After syringing the ear I found large granulations present. On using an angularly bent probe I discovered a fistulous opening on the posterior wall of the external auditory canal, extending into the mastoid process. The late Dr. Henry, of this place, was called in consultation, and with him I saw the case a number of times. The patient grew gradually worse, suffering almost constantly from excruciating pain, except when relieved by large doses of anodynes. He became more paralytic, had more difficulty in swallowing and in speech, and suffered from subjective sensation of heat and cold, till death finally relieved him, six months after the inception of the malady.

Symptoms. When in the course of a suppurative inflammation of the middle ear there is constant tenderness on pressure over the mastoid process, edema and swelling, with the ear pushed out from the head or not, we may suspect mastoid abscess.

The treatment may be divided into general and local. The general treatment includes laxatives and anodynes. Locally may be applied the rubber coil or bags of ice. When heat is desired, a rubber bag filled with hot water may be placed behind the ear, or small sacks filled with heated bran or salt may be used. I would warn against the too common use of injecting hot water into the external auditory

canal, or the application of poultices over the ear, as the moisture and heat increase the pus-formation, and this, as will be readily seen, is dangerous in a closed cavity like the mastoid process. Another mistake often made by general practitioners is the habit of filling the external auditory canal with powdered boric acid when there is discharge from the ear; this will close the fistulous opening or the ruptured drum-membrane, and thereby prevent free drainage. The injection of H_2O_2 has a tendency to thicken the pus and thereby prevent its free exit. The surgeon or specialist will open the cavity or enlarge the already existing fistulous opening which is too small for free drainage.

Two methods of opening the mastoid antrum are in use: One by boring with a drill; the other by chiselling into the cavity with chisel and hammer. In young children, and in those cases in which the bone is softened, the operator may often open into the cavity by pressing well down with a strong knife.

The chief landmarks for the surgeon are the temporal ridge and the external auditory canal. The opening should be made one-half inch below the temporal ridge and one-half inch posteriorly to and parallel with the external auditory canal. The chief risk lies in the danger of injuring the lateral sinus, which may easily occur to a careless operator, but if the foregoing precautions are observed there is little danger.

I will cite here another case in which the cavity was opened, and the case terminated favorably in a very short time.

Case II.—R. A. C., American, aged fifty years; a saloon-keeper, healthy, living only a block from my office; came for me to examine his ear the 1st of April, 1892, when he complained of severe pain on the right side of the head, radiating from the ear in all directions. There was partial deafness and tinnitus. On inspecting the affected ear, I found all the symptoms of suppurative inflammation of the middle ear. He was treated in the usual way. The case progressed rather slowly, but I hoped for a favorable termination. He was never confined to his bed. He had greatly improved three weeks after the first treatment. About this time he went to Centralia, exposing himself, and on his way home he got wet in a cold April shower. After he came home he suffered with a chill, and in a few days all the ear-symptoms took on an acute exacerbation. The pain was very severe, deep tenderness over the mastoid process developed simultaneously, and a day later there was swelling and edema of the mastoid prominence. I recommended opening of the abscess, to which the patient consented. On the 24th of April, with the assistance of Drs. Carter, of Nashville, and Beckmeyer, of Addieville, we proceeded to open the abscess. The head for a short distance around the process was shaved and thoroughly cleansed with soap and water, and then with an antiseptic solution. A crescent-shaped incision, posterior to the ear and with its concavity toward the ear, was made, and then a cross incision at right angles from the first was made, extending backward. The pericranium was pushed back and the bone examined to see whether or not a softened place could be found. As we could not discover this, an opening was bored with the triangular centerpiece of a three-quarter-inch Galt trephine. Great care was taken in directing the trephine-point, so that it was parallel with the external auditory canal and one-half inch below the temporal ridge. After boring down fully three-eighths of an inch, dark blood oozed out, and it was thought best not to bore any deeper.

This patient expressed himself perfectly free from pain after he recovered from the anesthetic, and made a very rapid and uninterrupted recovery. The wound was not closed, but dressed and treated open, in order that drainage might be free. The objection to the boring is, that the operator has to work in the dark and does not know when he has entered the mastoid antrum; for this reason I think that the chiselling procedure will supersede the boring.

OBSERVATIONS ON THE TREATMENT OF ASCITES BY FARADIZATION OF THE ABDOMEN.

BY ROBERTS BARTHOLOW, M.D., LL.D.,
OF PHILADELPHIA.

On first view it would hardly be credited that an effusion into the peritoneal cavity could be made to disappear by faradization of the abdominal muscles. Nevertheless, many cases have been reported, and I have had personal experience of two instances. The most recent paper on this topic that has fallen under my observation is that of Prof. Dr. Glax,[1] who reports on some new cases supplementing a former paper, and at the same time giving an account of the literature of the subject so far as it exists.

Although, as we shall presently show, ascites of widely different origin can be successfully treated by electricity, there are some contra-indications to the use of this agent. Not all cases are suitable for the applications of a remedy causing such violent concussion of the abdominal contents. Cases of acute or subacute peritonitis, when general soreness and tenderness accompany the effusion; or when a general peritonitis succeeds to a local inflammation —such as typhlitis—and ascites results,—these conditions are unfavorable for faradization. However, after all acute symptoms have subsided, and tenderness has disappeared, faradism may be resorted to, for cases of this character have been successfully treated by faradism.

The ideal case of ascites for electric treatment is that of complete distention of the abdomen caused by portal obstruction of a remediable character. Usually, however, the case is one of cirrhosis due to

[1] Centralblatt für die gesammte Therapie, November, 1892.

the alcohol-habit. In such an example the ultimate result depends on two factors: on the amount of hepatic substance remaining in a condition to functionate; on the ability of the patient to free himself from the alcohol-habit. It is understood that every organ of the body contains an excess of structural material above the needs of its function, and hence may lose some parts without becoming unequal to its place in the organism. Cases of ascites caused by cirrhosis getting permanently well under faradism may be of such kind. The last case in my charge was one of portal obstruction caused by alcoholic excess, the patient indulging enormously in champagne-drinking. Daily applications of the interrupted current to the abdominal muscles caused the fluid to disappear in four weeks, with, apparently, complete restoration of the general health. Of course, permanence of the cure depends on the patient refraining from further indulgence. The ascites of cirrhosis has been successfully treated by Solfanelli,[1] the original proposer of the faradic method, and by Alvarenga,[2] who appears to have been the second advocate of this plan. Ascites of chronic nephritis has been reported as cured by Muret,[3] whose experience was gained at Strasbourg, in Kussmaul's clinic, by Erb,[4] and others. Glax[5] refers to three cases of mitral insufficiency, and one of chronic peritonitis, in which the effusion was absorbed; and Muret cites two cases due to splenic tumor, and one of chronic tuberculous peritonitis, in addition to those already given, the result being the same—*i. e.*, disappearance of the effusion.

The explanations of the curative action of faradism in cases of ascites differ somewhat. It is urged by Solfanelli, by Segrist, and by Glax that strong muscular contractions be induced. Such advice does not necessarily imply that the effects of the current are supposed to be mechanical only. Erb maintains that reflex and catalytic actions, rather than mechanical, explain the absorption of the fluid. By Muret, Glax, and others the effect is attributed to the strongly contracting muscles acting on the contents of the cavity, but especially to the impression on the peripheral nerves reflected over the renal nervous apparatus, and to the reflex action proceeding through the medulla oblongata to the vasomotor system, thus affecting the vascular tension. These remote effects of abdominal faradization have been experimentally studied by Glax, who likens the action of faradic electricity applied to the epigastric region to the "crushing-blow experiment" of Goltz. Indeed, Busch[6] reports a case of syncope induced by the faradic current applied to the epigastrium.

Some late investigations into the effects of abdominal massage throw light on this subject—for a certain similarity exists between the mechanical and reflex effects of massage and the mechanical and dynamic actions of electricity. Eltz,[1] following up the investigations of Riebmayer and Nothnagel, confirms the conclusions of his predecessors, and ascertains that abdominal massage increases the absorption of intraperitoneal and intestinal exudates and the flow of urine. The effects of abdominal massage on the renal secretion have been studied especially by Hirschberg,[2] who finds that the amount of urine discharged is greatly increased, and this is a constant phenomenon. It is undoubtedly the case that massage of the abdomen acts mechanically on the organs within, and especially on the intestinal contents. I have known a case of intestinal obstruction, which resisted the best efforts of several physicians, to yield in an hour to the manipulations of a masseur, who was at the same time a practitioner of the black art.

These facts respecting abdominal massage rather indicate that the effects of faradism, in causing the absorption of the fluid in ascites, are more reflex than mechanical—more the increased action of the absorbent vessels and of the kidneys than the mechanical impact of the contracting muscles. The catalytic effects of the current on which Erb insists constitute a mysterious property—more an attribute of the galvanic than of the faradic form of electricity, if for no other reason that the galvanic is far more diffusible.

As the vasomotor and trophic actions are more affected by the galvanic current, I have sometimes resorted to the combined galvano-faradic, interrupted from sixty to eighty times per minute. There is another mode of applying the two currents simultaneously: by maintaining central galvanization, whilst the faradic is used by the ordinary arrangement of electrodes. Central galvanization may be accomplished as follows: by placing one electrode—the anode—over the seventh cervical vertebra, and the other—the kathode—on the epigastrium, and thus permitting a stabile descending current to flow steadily for the required time. With such an arrangement of the electrodes, the great central organs of the nervous system of animal and organic life are included within the circuit. At the same time that the central galvanization is proceeding, static electricity may be used instead of the faradic. This form of electric action is capable of more powerful muscular effects, with less of discomfort than faradic electricity. As Solfanelli, Alvarenga, Glax,

[1] The Practitioner, London, vol. xli, pp. 448.
[2] The Practitioner, loc. cit. [3] Ibid.
[4] Ziemssen's Cyclopedia, volume on Electro-therapeutics.
[5] Centralblatt für die gesammte Therapie, supra.
[6] Quoted by Glax: Centralblatt f. d. ges. Therap., loc. cit.

[1] The Practioner, supra.
[2] Bulletin Général de Thérapeutique, vol. cxvii, p. 259.

and Muret[1] insist on the necessity for strong muscular contractions, it may be better to make use of static electricity, and I have done so, as just stated, in the last case under my charge—with apparent advantage, but I am not prepared to say that it should be applied exclusively or in part in any case. I have employed the Toepler-Holtz machine, which is arranged in an air-tight glass case, the discharging rods outside. To procure a sufficient amount of action, the rods are so adjusted as to permit sparks to pass at intervals of from sixty to one hundred per minute, and the current is tapped by connecting the electrode wires with the inner and outer parts of the Leyden jars.

Either of two plans may be pursued in applying the faradic current: one electrode placed on the upper dorsal vertebra, and the other moved over the abdominal wall, so that each group of muscles is acted on, or both electrodes held in one hand, according to the method of Duchenne, and each group of muscles made to contract several times before passing on to the next. Fatigue of the muscles should be avoided, for this indicates that the applications have been too protracted or too strong. The *séances* should not exceed fifteen minutes in duration, and they need not be more frequent than once a day. In some of the reported cases the faradic applications have been made two and three times a day, and with increased rate of improvement; but, as a rule, once a day suffices.

The improvement noted begins immediately, and an actual diminution in the girth of the abdomen is observed from a single application. The more fully distended the abdomen the more promptly does absorption occur, but the rate of absorption lessens with the diminishing fluid.

THE USE OF THE CURETTE IN ABORTION.

BY R. E. SKEEL, M.D.,
OF CLEVELAND, OHIO.

No one who forms the habit of examining the pelvic organs of all married women applying to him for relief from general nervous symptoms, as well as local evidence of intra-pelvic disease, can fail to be struck by the great number of cases of endometritis, salpingitis, and old pelvic exudates, dating from a miscarriage or abortion. In many of these cases the patient either did not employ a physician, or did not summon him until serious symptoms, such as profuse hemorrhage, foul discharge, or severe pain, had occurred. In other cases the physician was called, but resorted to the old temporizing measures, because the patient objected to active treatment, or because he did not believe it indicated. Nearly all, if not all, of these serious sequelæ might be avoided by proper treatment with aseptic or antiseptic precautions. Too often the medical attendant is inclined to relieve the mind of his patient by assuring her that she will be all right, trusting to luck to avoid any immediately serious consequences, and hoping that the remote ones will not be properly traced.

The ignorance of the laity is often a bar to proper treatment, and we should do all in our power to educate them to recognize that an abortion is not a simple matter, but that, owing to frequent retention of secundines and, before the third month, the decidua vera, it is extremely likely to be followed by serious disorders.

The use of the curette is sometimes condemned in all cases in which membranes or placentæ are retained, unless serious symptoms supervene, and this objection is based on the theory that there is danger of infection, and that all shreds of decidua cannot be removed in this manner. Theoretically this does not appear to me to be true, and practical results prove that the immediate removal of all retained products of conception, and, before the third month, curetting to remove the decidua vera, is followed by results as nearly perfect as can be asked for. If we can fearlessly enter the uterine cavity and curette for endometritis, we can as safely do so for the removal of foreign matter retained there, and with as little danger of infection. Further, it has been proved that the cervical canal contains microbes that under ordinary circumstances are harmless, but which readily become virulent in the presence of dead animal matter. That all shreds of decidua can be removed I am certain, from an experience in a considerable number of cases.

Clinically, three classes of cases present themselves to us, leaving out of consideration those in which prophylactic measures may prove successful:

1. Cases of inevitable abortion.
2. Those in which the ovum, in whole or in part, has recently come away.
3. Cases in which, after the lapse of some time, hemorrhage, or decomposition, or pelvic peritonitis, has occurred.

In the first class of cases we meet with a few in which the hemorrhage is very profuse before dilatation has occurred, and here the great majority of authorities agree that immediate dilatation is required; with a careful scooping out of the ovum either with the finger or ovum-forceps. In addition to this, as we are obliged to enter the uterine cavity, it would seem advisable to use the curette in all cases occurring before the third month, for the purpose of removing the hypertrophied mucous membrane forming the decidua vera. If this is not curetted it will generally come away in shreds,

[1] The Practitioner, vol. xli. p. 448.

and from the entrance of air it has abundant opportunity to putrefy and set up septic trouble.

In cases with only moderate bleeding the *antiseptic* tampon, properly used, will control the hemorrhage, and at the same time secure rapid dilatation and frequently expulsion of the ovum. If this comes away entirely, it may be debatable as to what is the best course to pursue. The vast majority of cases have no further trouble, but the thickened decidua is certainly a foreign body, and it would seem best to proceed with a thorough scraping. If the ovum is not expelled after a few hours, it should then be removed by the finger and curette, as nothing is to be gained by further delay.

In the second class of cases, unless we have seen the ovum and are positive that it is entire, it is far better to thoroughly but gently scrape over the surface with the Récamier curette, the danger from this procedure being much less than that of retention of matter that so readily becomes septic.

The cessation of pain and hemorrhage is not positive evidence of the complete expulsion of the uterine contents, although the converse is undoubtedly true. In those cases in which hemorrhage persists or the lochia are offensive, no one will object to the removal of the retained matter, and here again the curette is the only instrument at all effective, removing, as it does, all shreds and attached portions of membrane, and leaving no nidus to favor the development of bacteria, to result in the production of a purulent or hemorrhagic inflammation of the endometrium in later years. When pelvic peritonitis has occurred, the same principles should apply, but the treatment, advocated by Polk, of subsequent drainage certainly looks feasible. In this class of cases there is not the immediate improvement which follows when a pure sapremia exists, but the primary infecting center should none the less be removed.

This operation can be safely performed with lay assistance only, if professional help is not obtainable. An anesthetic is rarely necessary.

A vaginal douche should first be given of 1 : 3000 hot bichlorid solution. The Kelly rubber pan or some similar receptacle is of great assistance. If the physician is obliged to do the operation unaided, the patient is placed in the lithotomy position, and the bivalve speculum, well sterilized, is introduced. The cervix is steadied with a tenaculum or tenaculum-forceps, and the sterilized sound is introduced to ascertain the size, depth, and position of the uterus.

A Récamier curette, the large end of which is dulled by rubbing on a whetstone, or by filing, is introduced and the entire uterine cavity is thoroughly gone over without any great amount of force. Sterilized hot water or hot bichlorid solution, 1 : 10,000, is now used to wash out the débris, and, when no more comes away by washing, the uterine wall is again gently scraped, to ascertain whether anything still remains attached to it. If nothing more is removed, the uterus is again thoroughly washed out, a final vaginal douche is given, and the antiseptic pad applied over the vulva. Of course, perforation of the uterus is possible; but this ought never to happen if the curette is handled gently and no undue force is used.

I am aware that the principles urged in the foregoing are in the main those advocated by Hirst; but it is the writer's object to emphasize the connection existing between the retained products of conception and infection followed by acute or chronic endometritis, and to urge the use of the curette more generally to avoid these disastrous after-effects.

Like the uterine sound, the curette is capable in careless hands of doing great damage, but properly used it is also, like that instrument, invaluable.

ALBUMOSE.

By R. W. FISHER, Phi.G., M.D.,
of Salt Lake City, Utah.

The presence of albumose in the urine has not received the attention it deserves; in the first place, because of its rarity, and in the second, because it seems difficult to associate the substance with any particular pathologic condition.

Nearly all writers on the chemistry of the urine either quote from some other work or give it some new name, till the subject is much bewildered and the chemical reactions are not well understood.

That this form of albumin is much oftener present than recognized, is, I am quite sure, owing to methods used. The routine method in general use, as is well known, is to add acetic acid to the urine and boil. If this gives no reaction it is taken as final. As the reactions given further on will show, this would fail to demonstrate the presence of albumose.

Bence Jones was the first to write on this subject. He found albumose in the urine in a case of molities ossium, and gave it the name of hydrated deutroxid of albumin. Kuhne also describes a case and gives it the name of hemialbumose. Da Costa describes a number of kinds of albumin, and to this one gives the name albumose, which I have adopted. Roberts does not record any cases but says it is considered identical with the pro-peptone of Schmidt-Mulhein, and with the peptone of Meissner.

Peptone is very frequently found in the urine in cases of rheumatism or when the exudation is being absorbed in pleurisy or pneumonia, and should be carefully excluded.

The best test for peptone is the overlaying test

with Fehling's solution, which gives the rose-colored zone; but if albumin is present the color is purple. Potassium ferrocyanid and acetic acid give a precipitate with albumose, but not with peptone.

All the writers on this subject have made the same mistake in stating that albumose is not precipitated by heat. If the urine is very acid, or if there has been any acid added, there will not be any precipitate on heating. Holland, in speaking of this, called it acid albumin.

In making a test, one should be sure the urine is not too acid; otherwise there will be no precipitate and this form of albumin will escape notice. There must be some change in the kidneys, as in all the cases I have seen there were hyaline casts.

My attention has only recently been called to this subject, and I have had no opportunity to examine the kidneys post-mortem. In my experience the substance has always been found in some diseased condition of the bones.

Whether there is any connection between the two conditions, I am not prepared to state at present.

The following are the tests for albumose. It is precipitated by alcohol, carbolic acid, nitric acid, chromic acid, mercuric chlorid, tannic acid, picric acid, and metaphosphoric acid. If the urine be first acidulated with acetic acid, albumose will be precipitated by potassium ferrocyanid, potassio-mercuric iodid, sodium chlorid, magnesium sulphate. All these precipitates are dissolved by heat.

The best method for separating the proteids is given by Da Costa. Saturate the urine with ammonium sulphate, which will precipitate ovalbumin, serum-albumin, paraglobulin; collect on a filter and test the filtrate for peptone. Dissolve the precipitate in distilled water and acetic acid, add ether, and if ovalbumin it will be coagulated. To the solution add magnesium sulphate and acetic acid, and paraglobulin and albumose are precipitated. Da Costa says magnesium sulphate will precipitate albumose, but unless acetic acid be added there will be no precipitate If the precipitate will dissolve on heating, it is albumose; if not, is paraglobulin.

The mistakes that are generally made are in confounding albumose with peptone, mucin, and paraglobulin, but with a little care and applying the well-known tests these can be excluded.

Aneurism of a Sinus of Valsalva.—At a meeting of the Medical Society of Hamburg, SIMMONDS (*Deutsche medicin. Wochenschr.*, No. 51, 1892, p. 1171) presented an aneurism of a sinus of Valsalva that had pushed a leaflet of the pulmonary valve before it, and had ruptured into the pulmonary artery. The aorta displayed the remains of a previous endocarditis, two leaflets being agglutinated. The specimen was obtained from the body of a man, forty-two years old, who had died with symptoms of profound pulmonary edema.

ORIGINAL LECTURE.

PROLAPSUS UTERI.

Delivered at the Philadelphia Hospital, October 22, 1892.

BY E. E. MONTGOMERY, M.D.,
PROFESSOR OF GYNECOLOGY, JEFFERSON MEDICAL COLLEGE; OBSTETRICIAN, PHILADELPHIA HOSPITAL; GYNECOLOGIST TO ST. JOSEPH'S HOSPITAL.

I BRING before you to-day a patient, fifty-three years old, who presents a history of having suffered from so much pain in conjunction with a scanty menstrual flow as to be confined to bed during the entire period. Some years ago she noticed a settling down of the uterus, when she suffered from disordered menstruation, pain and tenderness in the pelvis and a profuse discharge. She has had two children at term, and two miscarriages, one at the second, and the other at the fourth month. In both of her confinements it was necessary to use instruments, and she was torn; a prolapse of the uterus took place after the birth of the first child, twenty years ago. She has done heavy work for many years, and in addition has suffered from troublesome cough and from constipation. She gives no history of abdominal enlargement. The measurements between the spines of the ilia are 27 cm., between the crests 29; Baudelocque's diameter is 18. She underwent an operation two years ago in the Presbyterian Hospital, when a portion of the uterus was removed.

I have not as yet had an opportunity to examine the woman, and bring her before you to-day for that purpose. As I separate the vulva, you notice there is a slight protrusion of the posterior wall of the vagina, which is known as a rectocele; if situated in the anterior segment, or anterior wall of the vagina, it would be called a cystocele. As I introduce my finger I find it comes in contact with the bar of a pessary, and it is probably due to the presence of this instrument that there is no greater displacement. As I withdraw it I find that it was situated wrong side up. This may have resulted, however, from its having been displaced in walking. As I introduce my finger into the vagina I find the uterus to be flush with it. The uterus is small and the vagina completely relaxed. If the woman engaged in slight exertion and straining, the protrusion of the vagina would be greater than it is.

This pessary is known as a retroversion pessary. In a patient like this, with the cervix entirely gone, it has no effect other than to distend the vagina and prevent the vaginal walls from being relaxed. In order to sustain the uterus when retroverted there must be a sufficient amount of the cervix projecting into the vagina for the pessary to act upon and drag backward. The pessary does not serve as a support for the fundus of the organ, but as it draws back the posterior fornix of the vagina, the traction is exerted upon the cervix, which is drawn backward and upward, the other end of the lever—the fundus—being tilted forward.

In introducing the pessary you separate the vulva with the left hand; then, taking the pessary between the thumb and the forefinger of the other hand, its posterior bar is held parallel with the axis of the vulva, and is pressed against the posterior commissure of the perineum, pushing this backward until one-half of the

pessary has entered the vagina. It is then rotated, and, with the finger placed against the posterior bar, the latter is carried behind the cervix into the posterior fornix.

The next patient is a woman, eighty years old, who enjoyed perfect health until three years ago. Her menstrual life was regular and painless. She has had four children at term and two miscarriages, the latter occurring at the beginning and end of her childbearing life. Her occupation was that of a cook, necessitating her being much upon her feet. She has always suffered from constipation; her labors were natural and easy. She never suffered with violent cough, nor has she had any abdominal enlargement.

This patient presents a most interesting condition. As we separate the limbs and expose the external genitals you see the entire uterus, covered by the vagina, projecting from the vulva. A portion of the bladder is situated in the anterior portion of this tumor; the external os and the cervix, as you see, have undergone some ulceration. This patient differs from the preceding one in presenting the condition that is known as procidentia, the latter term being only applicable to those cases in which the entire uterus makes its exit from the genital canal. Procidentia differs from the term prolapsus in being more definite and applicable only to those cases in which the prolapse is complete.

In the study of prolapsus and procidentia, it is well to consider for a moment the relation of the uterus in its normal position and the forces that conspire to maintain it. The organ is situated, as you remember, between the rectum posteriorly and the bladder in front; it is situated in the upper part of the vagina, projecting into it to a limited degree, the projecting portion being known as the vaginal portion of the cervix. The uterus does not occupy a fixed position. It may vary to a considerable degree from one position, and the change still not be a pathologic one. Thus, it may be pushed forward by distention of the rectum, or backward by distention of the bladder. It may be displaced downward by intra-abdominal pressure or by traction upon the cervix, to again resume its former position when the displacing influence is removed.

It is a point of interest to consider the forces that retain the uterus in its normal position. There has been much discussion upon what these are, some claiming that the uterus is set on top of the vagina like a cork in a bottle; so long as the vagina keeps its normal position the uterus is retained in place. Others attribute its support to the ligaments, notably the utero-sacral; when these ligaments lose their natural resiliency they no longer resist the displacement of the uterus, and are gradually elongated or atrophied until procidentia takes place. Some attribute the maintenance of the organ in place to the suction of the peritoneal cavity; some to the peritoneum. The truth is, it is not any one of these forces, but all combined.

In considering the ligaments of the uterus, it is well to remember that they have, running out in their folds, muscular structure from the superficial and middle layers of the uterus, and it is from the influence of this structure that the organ retains its normal position. To determine this fact, it is only necessary to drag upon the uterus, when upon removing the traction the organ will be found to resume its normal position. You will find the vagina represented in some text-books upon anatomy as distended. Such a condition, however, is abnormal, as the anterior and posterior surfaces lie in contact. The vagina lies at an angle of 60° with the horizon, and the uterus, with the bladder empty, lies with its axis at an angle of about 45° with that of the vagina, and the displacement of the uterus into and its exit from the vagina constitute a hernia just as much as would the emergence of any of the abdominal viscera through the femoral or inguinal canal.

One of the first tendencies to displacement downward is manifested in the change of relation of the axis of the uterus with that of the vagina. When the uterus becomes displaced backward, so that its axis is parallel to, or continuous with, that of the vagina, the patient suffers from increased abdominal pressure upon the fundus and back part of the uterus, bringing it down into the vagina as a wedge. The subsequent displacement of the organ is much more rapid, depending, of course, upon the degree of resiliency and resistance of the remaining structures. This tendency to displacement may be aggravated by two conditions; either a want of support in the genital canal, resulting from lesions of parturition, or increased weight and intra-abdominal pressure on the part of the uterus itself, or of any growths about it. When these two forces conspire together, the displacement is much more rapid. The weight of the uterus will be increased by a state of chronic inflammation or subinvolution from the presence of fibroid tumors in its walls. Intra-abdominal pressure is increased independently of the uterus by the presence of growths in the abdominal cavity, such as ovarian tumors, tumors of the omentum, liver and spleen, and from tight lacing.

The most frequent cause of displacement is a laceration of the perineum and of the vagina, taking place during labor. The effect of these lesions is dependent somewhat upon their extent. When the entire perineum is torn through to the sphincter ani there is at once a want of support of the anterior segment of the vagina, and the bladder becoming filled, the uterus resting upon it leads sooner or later to sagging down of this organ and the formation of what is known as cystocele. If the laceration has been extensive there will also be a turning out of the posterior wall of the vagina, giving rise to what is known as rectocele. The traction of the walls of the vagina upon the cervix leads to its being drawn lower down, and more nearly in the axis of the vagina; and in this way the fundus of the organ is tilted backward.

There are varying degrees of the displacement; thus, when the uterus has settled down to the vulva or rests upon it, the condition is known as prolapse of the first degree; when a portion of the uterus protrudes, the condition is known as the prolapse of the second degree; and when the entire organ has emerged from the vagina, the condition is known as prolapse of the third degree, or procidentia.

In some cases the traction of the walls of the vagina upon the cervix is not sufficient to lead to the displacement of the uterus. By dragging upon the cervix the heavy walls exert traction upon it, and if the fundus of the uterus be fixed by a normal, healthy condition of the ligaments, or by inflammatory adhesions, the supra-

vaginal portion of the cervix becomes elongated, until the cervix presents a cord-like attachment connecting it with the fundus of the uterus above. This condition is known as hypertrophic elongation of the cervix, and is one that must be recognized, as failure so to do will render the attendant unable to cope with the difficulty. A violent cough or obstinate constipation tends to aggravate the rapidity of the displacement. The occurrence of prolapsus is not an indication that the woman has borne children, as we not infrequently find women who, from defective muscular development, from obstinate constipation or other causes, may suffer from prolapsus of the uterus. Some years ago I saw a patient in whom prolapsus occurred from intra-abdominal pressure, during dancing. Examination disclosed the fact that she had an ovarian tumor, which had pushed itself down into the pelvis, and had consequently displaced the uterus.

Patients suffering from beginning prolapsus will complain of sensations of weight or dragging, as if everything was about to fall out. This is increased by muscular effort, straining, lifting, and by locomotion. There is more or less irritation of the rectum, possibly increasing the tendency to constipation. There is a sensation of discomfort in the bladder, increased by pressure. The patient is annoyed by frequent micturition. The vesical distress is greatly increased as the prolapse progresses. A portion of the bladder-wall becomes situated below the level of the urethra, so that the bladder is never completely emptied unless the pouch is pushed up. This is attended with decomposition of the urine in the cul-de-sac, and not infrequently with a deposit of calcareous material, which may result in the formation of a large calculus.

The diagnosis of prolapsus can be readily made by an examination of the protruding mass. If we find the protrusion to be situated on the anterior wall of the vagina, while the finger passes into the vaginal canal posteriorly to this, we recognize that we have to deal with a cystocele. On the contrary, if the finger passes anteriorly to the protruding mass, this is evidently a rectocele. These conditions may be present independently of the displacement of the uterus. When the tumor is situated centrally and is covered by the vagina on all sides, with an opening in the center of the protruding mass, we recognize it as a prolapse of the uterus. The protruding mass should, however, be carefully examined to see whether it includes the entire uterus or whether the cervix or fundus has been drawn out as already suggested.

How shall we treat these displacements? The earlier writers were in the habit of regarding the uterus as a sentient body, which could be frightened back into its normal position by being brought into contact with disagreeable objects. Soranus criticises his colleagues or competitors for placing the woman head downward for twenty-four hours with a view of correcting the displacement. The first consideration in treatment is to replace the organ in its normal position. This is ordinarily accomplished with but little difficulty. Tilting up the fundus of the uterus, bringing it into the canal and pushing upon the uterus, in this way inverting the vagina, the organ is replaced in its proper position. Occasionally the congestion of the uterus and tissues, resulting from the displacement, may have been of such a character as to lead to enlargement of the organ to such a degree as to prevent its being readily pushed back. In such cases it may be necessary to apply an Esmarch bandage to the surface of the tumor, thus pressing the blood out of it before it can be returned.

The protruding mass, exposed as it is to contact with the urine, to friction from the limbs and clothing, soiled with the discharges from the rectum, is not infrequently the seat of extensive ulceration. The tendency to ulceration is enhanced by the congestion of the organ and the consequently lowered vitality. When the uterus has been displaced for a length of time; when intestinal coils have followed it and have become adherent in abnormal situations, the replacement of the uterus may be impossible.

Having replaced the uterus, we have now to consider the manner in which its normal position is retained. This may be accomplished in two ways: by the use of pessaries or by a plastic operation. A great variety of pessaries have been introduced for this purpose. They may be divided into two classes: those without and those with external support. Those of the former class rest upon the posterior segment of the vagina and maintain the uterus in its normal position. When the vagina is large and roomy, or the uterus has been frequently displaced, or the displacement has existed for a considerable length of time, the retention of a pessary may be attended with difficulty.

The use of pessaries is not infrequently attended with discomfort. If the vaginal canal has been extensively injured, the pessary finds no point of support, and is readily pushed down and out. If the pessary is too large, and makes undue pressure upon the vaginal walls, it should be removed. From the secretions of the vagina calcareous material is not infrequently deposited upon the pessary, producing a roughening of its surface, which results in ulceration of the parts irritated by it. Wearing a pessary is at best attended with a good deal of discomfort, so that not infrequently a patient herself is willing to submit to any operation that will enable her to forego the necessity of wearing such an instrument.

In the patient before us, eighty years of age, no operation would be justifiable; her tenure of life is so short, the probability of successful result so slight, that it would not be wise to undertake an operation. We would suggest that the vagina be packed two or three times a week with iodoform-gauze and the uterus in this way held up. The incorporation of glycerin with the gauze will be of advantage. A great variety of plastic operations have been done upon the vagina and its outlet. Thus, the perineum has been denuded and a skin-flap made; in other cases a denudation has been practised upon the posterior wall of the vagina, extending up toward the uterus; or again, denudation has been done upon the anterior wall, in the form of a triangle or of an ellipse, in an oval denudation, and so on. In ordinary cases, probably as good a method of procedure would be to denude the surface upon either side of the urethra, on the anterior wall of the vagina, and suture this, as recommended by Skene. This may be done with buried catgut sutures. The posterior wall of the vagina may be operated upon by making a triangular incision upon its posterior surface down to the vulvo-vaginal communica-

tion, and then freshening the perineum below and introducing sutures in such a way that each drawing of a separate suture will result in lifting up the posterior wall of the vagina against the anterior. This imitates Nature's method.

An operation introduced by Le Fort some years ago consists in denuding a surface of about four-fifths of an inch on the anterior wall of the vagina with a corresponding one on the posterior wall, and bringing these two raw surfaces together by means of sutures in such a way that union takes place; the uterus is supported on the vaginal septum and the vagina is divided into two canals. This operation is one that is applicable after the menopause, but not prior to this, as we can readily understand that the occurrence of pregnancy under such a condition would be likely to result in serious laceration. In the majority of cases the operation suggested by Martin is probably the most effective. This consists in amputation of the cervix, thus securing a depletion of the uterus; second, the narrowing of the anterior wall of the vagina; and third, narrowing of the posterior wall and enlarging the perineum.

CLINICAL MEMORANDUM.

A CASE OF PUERPERAL ECLAMPSIA AT THE SEVENTH MONTH; WITH A FEW THOUGHTS AS TO TREATMENT FROM PRACTICAL EXPERIENCE.[1]

BY DOUGLAS AYRES, M.D.,
OF FORT PLAIN, N. Y.

PUERPERAL eclampsia, threatening, as it always does, the life of the mother, cannot fail to seriously disturb the mind of any practitioner of medicine, however extensive may have been his experience. The mother, if she be in labor, suddenly complaining of pain in the head, perhaps of some derangement of vision, epigastric pain, dyspnea, etc., soon has a convulsive seizure, which, if once seen, can never be mistaken. The staring eyes, the wonderfully rapid contracture of the facial muscles, the rolling eyeballs, and the contracture of the muscles of the neck, drawing the face to the extreme right or left, with the livid appearance and protruded tongue, and saliva forced from the angles of the mouth, take away almost every semblance of "the human form divine." This, together with the contracture of the muscles of the extremities as well, is a condition which has doubtless been witnessed by every physician within hearing of my voice; and all who have seen it will acknowledge that it is one of the most serious conditions that we are called upon to treat; one in which the prognosis is always grave; one that requires early and most vigorous treatment. We can congratulate ourselves, perhaps, upon the fact that it is not of frequent occurrence, as various statistics prove that it occurs but once in about five hundred pregnancies.

I have selected a case that occurred in my practice during the past year for this report, on account of its occurrence at the seventh month of utero-gestation, thereby offering serious complications. It is not my purpose at this time to discuss the etiology of eclampsia, further than to say that it may be of uremic, reflex, or apoplectic origin; that, while albumin in the urine may be a very constant attendant, cases may occur without any, or scarcely any, being present. Great excito-motor irritability may act reflexly and produce uremic attacks, as irritation of the gravid uterus; but cases that can be traced purely to these causes, I judge, from my reading and practical experience, to be very rare. Those of apoplectic origin are undoubtedly the most fatal. I would say, in this connection, that I believe that those investigators who think that the greater proportion of these cases have their origin in uremia are correct; that is, uremia in a general sense, including any or all of the constituents of the urine that may be retained as the result of imperfect action of the kidneys, together with marked increase of arterial tension.

CASE.—The husband of Mrs. F. H. called at my office July 5, 1891, to inform me that she was seven months advanced in a second pregnancy; that there was some puffiness of the face, and some edema of the lower limbs. I requested a specimen of her urine of the twenty-four hours, which I examined with reference to the presence of albumin, of which I found a large amount. The quantity of urine passed we estimated to be about one-third less than the normal average, or about thirty-four ounces. The usual treatment was advised: mental quietude, milk-diet, with iron tonics and mild laxatives.

About 4 P.M. of July 9th (four days after the first call) I was again hastily summoned to attend her. Her mother gave me the following history: She had felt as well as usual on that day, until the afternoon, when she had complained of some pain in the head and had gone into another room to lie down upon a couch. Shortly afterward the mother heard a sound as of something falling, and hastily went into the room, where she found her daughter lying upon the floor in an unconscious condition. There were slight convulsive movements. She recovered consciousness in a short time, when they placed her upon the couch, where she lay quietly, asking some questions with regard to what had happened, but in a somewhat dazed manner.

When I arrived, she seemed perfectly conscious of her surroundings, and answered intelligently the few questions that I asked her. I remembered that I had attended her in confinement eleven years before, and that immediately after the birth of the child she had an eclamptic convulsion, for the relief of which I bled her very freely (nearly thirty ounces), which seemed only sufficient to reduce the force and volume of the pulse, after which she rallied; and very luckily there was no recurrence.

I found her face puffy, and the lower extremities quite edematous. She was thirty-six years old, a person of full habit, weighing perhaps one hundred and forty or fifty pounds. The kidneys had acted about as usual (as well as the family could judge) for the past few days; if there was any change there was a little falling off in the amount of urine passed, from our previous estimate. I found a full, strong pulse, flushed face, and heat of head. I ordered cold applications to the head, and, as the bowels had not acted as freely as desirable, also a stimulating enema, which met with a fair response; and gave immediately afterward a full dose of calomel and jalap. She was soon seized with a severe convulsion. I immediately opened a vein, with a good free opening, from

[1] Read at the meeting of the New York State Medical Association, November, 1892.

which I allowed the blood to flow, until its effect was very perceptible upon the pulse (which required the loss of nearly twenty-five ounces), when she slowly returned to consciousness. I then made a vaginal examination, and found the os somewhat softened and dilatable.

There were at this time marked labor-pains. Making use of the fingers as my dilators, I began slowly and carefully to dilate, and found that the parts yielded very satisfactorily. When the efforts of the uterus, which had now somewhat increased, had pressed the head well down in the os, I administered three-quarters of a dram of fluid extract of ergot, with one-third of a grain of morphine, and shortly after applied the forceps, making gentle traction with each expulsive pain; and in a short time succeeded in delivering a dead child. The uterus was well and carefully kneaded, and within one-half or three-quarters of an hour the placenta was expelled.

There was but a moderate amount of hemorrhage, as the uterus seemed to contract fairly well. The patient was now breathing easily, but was quite unconscious, making an effort to open the eyes, if spoken to in a raised tone of voice; the pulse was of fair strength and regular. I found that she could swallow, and ordered a few ounces of milk, which was slowly given. She remained in this condition for about three hours, when another convulsion occurred, which was perhaps, as to tonic contraction and length of time, not so severe as the last. Shortly after this attack I relieved the bladder of several ounces of urine, and found it to contain about the same quantity of albumin.

I should have made use of chloral before this time; but as I was some distance in the country, and found that I had none with me, I was not able to do so. I obtained some, however, about two hours later, at which time there were evidences that another convulsion was about to occur. I immediately injected, per rectum, fifty grains, properly guarded with mucilage, having found that a less amount does not usually produce the desired effect. The woman was quiet from this time as to any evidences of contracture for nearly six hours (breathing as in sleep); when with the first evidences of muscular movements the same amount was again injected. I found this to be necessary at about the same intervals, until four injections had been administered; when all evidences of recurrence ceased. This was about thirty-six hours from the second attack. The bladder was relieved during this period at intervals of six or seven hours, each time of a few ounces of urine, which was of about the same character as to appearance and amount of albumin as the first drawn.

The patient remained unconscious for nearly fifty hours, but was able to take some nourishment, which was given in the form of milk at regular intervals, or at such times as she could be induced to swallow. From this time she slowly began to recover; her convalescence extending over a period of sixteen or seventeen days, during which time she suffered from amblyopia to such a degree as not to be able to recognize the members of her family or any object brought within the usual focal distance. There was a good deal of muscular tenderness, and quite marked prostration. The after-treatment was tonic and alterative, under which she made fairly rapid progress to complete recovery.

There are a few questions of importance which the treatment of this case suggests:

1. What of the importance of venesection for the relief of the condition?

2. What cases would be most likely to be benefited by it?

3. What of the use of chloral as a therapeutic measure, as against chloroform by inhalation and morphine by subcutaneous administration?

I believe, as to the first, that its prompt action renders it an agent of the utmost importance; that it relieves the brain by lessening the force of the circulation and consequent arterial tension, and many times wards off a serious brain-lesion; but that it be practised early is of the utmost importance, before irreparable injury has been accomplished. Again, it gives us time to make use of other remedial agents, such as will relieve the general oppression, and, as a prominent writer has said, favors absorption and renders the patient more susceptible to their influence.

Secondly, I believe that women of full habit, with suffused face, and full, slow pulse, showing much arterial tension, will always be greatly benefited by venesection. My personal experience has been that when this important measure has been neglected the difficulty has much more frequently proved fatal. I call to mind in this connection, eight cases, seven of which were consecutive, that I treated by bleeding, three with the addition of chloral to the treatment, with a mortality of one—that one a primipara six months advanced. She was a person of full habit, had two very severe convulsions before I saw her, and, although I bled her freely, there was no return to consciousness; and I judged from the evidences that a serious brain-lesion had taken place early, perhaps with the first seizure. Barquissau says: "It diminishes the general mass of the blood; relieves the nerve-centers, which have a tendency to become congested; and by making the spinal bulb anemic, we deaden reflex irritability, which keeps up the hyperemia and by which the convulsive attack may be revived."

It is now somewhat more than twenty years since chloral hydrate became generally known as a remedy in the treatment of eclampsia, either by the mouth or otherwise. My first experience in the use of it was subcutaneously. I was called in consultation in a very severe case, in which the patient had suffered from a number of convulsive seizures after free venesection. I had seen, a few days before, an article in one of our journals with regard to the use of chloral hydrate subcutaneously in these cases. I advised it, and we made trial of it, injecting freely in the lower extremities. It relieved our patient, but it was some time before the ulcerations, resulting from the irritation caused by the chloral, were healed. I have since used it per rectum (thereby avoiding a repetition of my first unpleasant experience), as it is much more quickly and easily administered in this way, and as many times it cannot be given by the mouth. I should certainly much prefer it to chloroform; for, although chloroform arrests the convulsive seizures, it usually does so only for a short time, and the patient cannot be kept under its influence for a considerable length of time without danger. Some of the more prominent objections to its use that have been mentioned are that it produces congestion of the

nerve-centers, and so may increase cerebro-spinal congestion; also the asphyxia, to which complication there is a predisposition. Depaul admits that to a certain extent it does modify the eclamptic attacks, but says: "They exist none the less, as well as the complications—congestions, central hemorrhages, pulmonary congestions, etc."

There is no doubt but that we have in morphine and chloroform valuable remedies, the effects of which have been closely and practically investigated by the profession, and that they have held their place in professional confidence. Still, it seems to me that some of the arguments presented, especially those against the long-continued use of the latter, are well chosen. As to morphine subcutaneously, I could fully indorse its use, in doses not to exceed a quarter of a grain, to be repeated in case it be found necessary within a limited length of time, say one hour; but I should fear the heroic doses recommended by some writers, of from one-half to one grain, and boldly repeating upon evidences of recurrence; notwithstanding the fact that great tolerance of the drug has been urged in the eclamptic condition.

More definitely as to the last proposition, I believe that we have in chloral hydrate an agent of wonderful therapeutic value for the relief of reflex irritation; and that in the two, venesection first, judiciously, promptly, and boldly done, followed by chloral if the convulsions continue, we have measures that will never be supplanted by any more perfect or potent. After an experience of twenty-seven years of active practice, I can recall many cases treated in this manner, and the great majority have recovered: some by venesection alone, others by venesection and chloral hydrate combined. The former has, however, been my sheet-anchor, and I firmly believe that, if early and judiciously done, it will in the future, as it has in the past, save many mothers from an untimely death.

NEW DEVICE.

A SPLINT FOR FRACTURES AND LUXATIONS AT THE ELBOW-JOINT.[1]

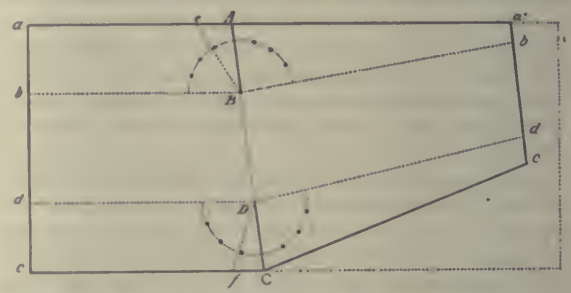
BY CHARLES W. DULLES, M.D.,
SURGEON TO THE RUSH HOSPITAL AND SURGEON TO OUT-PATIENTS AT THE PRESBYTERIAN HOSPITAL, PHILADELPHIA.

INQUIRIES in regard to a splint that I have devised for the treatment of fractures and luxations at the elbow having come to me, in consequence of a reference to it in a paper on "Fractures of the Arm," by Dr. John B. Roberts (*Annals of Surgery*, July, 1892), induce me to publish a description of it.

It is well known, and especially since the instructive publications of Dr. Oscar H. Allis on this subject, that one of the chief obstacles to the successful treatment of fracture at the elbow depends upon the difficulty of preserving the normal relation between the principal axes of the arm and forearm. The normal relation of these axes, when the arm is extended, is that of the two lines of an obtuse angle; and to preserve this, a certain number of surgeons have recently advocated and practised the treatment of fractures at the elbow by maintaining the forearm in full extension; for the reason that treatment by means of angular splints is often followed by displacement of one of the condyles of the humerus with loss of the normal abduction (outward, or radial, deviation from the plane of the axis of the humerus) of the forearm.

Ever since this danger impressed itself sufficiently upon my mind I have been using a splint which has proved quite satisfactory in my hands.

This splint, I make, for each case, from a sheet of light tin or sheet brass. On such a sheet I rule lines, guided by the sound arm, to mark out the relation of the axis of the forearm to that of the upper arm with the whole member extended. I then mark the points of the articular surfaces of the internal and external condyles and draw a straight line across the metal, passing (see figure) through them. With a strong pair of shears I then cut the whole splint out of the metal, and cut from the angles at the inner and outer sides toward the middle line (in the figure, from *A* to *B* and from *C* to *D*). I then make a few holes with an awl, as shown on the dotted semicircle, and bend the sides (*A a b B*, *C c d B*, *A a′ b′ B*, *C c′ d′ D*) backward (as the splint is to be reversed for



the injured arm) so as to form two troughs, and bend these troughs exactly along the line *B D*, so as to make an angular splint. Fixation at the angle required is secured by passing through the holes at the sides an ordinary brass paper-fastener and bending its ends over. The different holes permit of flexion at various angles greater than a right angle, and by cutting away from *E* to *B* and from *F* to *D*, different degrees of acute angulation may be obtained. Suitable padding with wool (which I prefer to cotton) completes the preparation of the splint, into which the arm is placed, with the forearm in supination, and in which it is confined by means of a bandage.

The splint is light and comfortable, and it permits examination of the joint at any time, without danger of displacement of the fragments, by simply removing the enclosing bandage. In describing it, I do not think it necessary to speak of the means for reducing or preventing traumatic swelling, which are guided by the principles so admirably taught by the late Mr. Sampson Gamgee.

The idea of the splint is to take a piece of light metal and convert it into a trough, the shape of which shall conform to the lines of the arm in extension; then to flex this trough along a line which corresponds with the true plane of the elbow-joint.

An examination of such a splint will show that it conforms to the proper lines of the arm and forearm in extension, and that on flexion the lower trough follows

[1] Read before the Philadelphia Academy of Surgery, December 5, 1892.

very closely the line of movement of the forearm as it approaches the humerus. At the same time it will be seen that the point at the angle in which the upper end of the ulna rests in flexion is lower than that in which the upper end of the radius rests, as should be the case, to conform the normal anatomic relation of these parts and the normal relation of the internal condyle of the humerus to the external condyle. The ulna being at the elbow-joint a thicker bone than the radius, it is well to have the wool cushion on the radial side a trifle thicker than on the ulnar side; but in many cases of fracture the first swelling compels one to adapt the cushioning rather to the condition of the soft parts than to the absolute size of the bones and the position of their surfaces.

A splint of this sort can only approximately imitate the conditions of the elbow-joint; but I think it does imitate them in a way conducive to good results in the treatment of fractures. So far as my experience goes, the results have justified my expectations.

Of course, I do not imagine that any one form of splint will prove suitable to every case; but this splint is light, clean, comfortable, and easy to apply, while permitting frequent examinations without risk to the position of the fragments, and changes of the degree of flexion as often as may be necessary, in each maintaining the normal relation of the axes of the arm and forearm.

A study of the elbow-joint, with a view to securing the proper position of the parts after fracture, has led me to believe that good results may be obtained by flexing the forearm quite fully upon the humerus, in which position both ulna and radius act as natural splints to the condyles. On writing this to Dr. H. L. Smith, of Boston, with whom I have had some correspondence on this subject, he tells me that he has already experimented on the cadaver in this direction, with the result of showing that, by this method (the forearm being semi-pronated), the condyles were fixed in a correct position. He has also treated some cases of accidental fracture in the same way, with good results.

If this experience should be repeated and confirmed by others, the splint for elbow-joint fracture would probably be a simple V-shaped one, placed against the outer side of the arm and the back of the forearm. With such a splint I am now treating an inter-condyloid fracture of the humerus. The patient is entirely comfortable; the bones appear to be in correct position, and I hope for a good result.

4101 Walnut Street.

MEDICAL PROGRESS.

Biologic Therapeutics.—In a recent address delivered at the New York Post-Graduate Medical School and Hospital, Dr. Wm. A. Hammond stated that he had prepared and had employed therapeutically extracts from the brain, spinal cord, testicles, ovaries, pancreas, stomach, and heart, which he calls respectively, cerebrin, medullin, testin, ovarin, pancreatin, gastrin, and cardin. The process of preparation of the brain, from which that of the other organs does not differ, consists, after its removal, in washing the organ in water acidulated with boric acid, and cutting it into small pieces with a mincing machine; then to 1 part of this, in a wide-mouthed glass-stoppered bottle, are added 3 parts of a mixture of equal parts each of a saturated solution of boric acid in distilled water, pure glycerin, and absolute alcohol. After standing in a cool place for at least six months, being well stirred or shaken two or three times a day, the mixture is permitted to pass through a porous stone filter. The residue upon the filter is enclosed in several layers of aseptic gauze and subjected to a pressure of over a thousand pounds, the exudate being permitted to fall upon the filter, and being mixed with a sufficient quantity of the filtrate to cover it. When it has entirely filtered through, it is thoroughly mixed with the first filtrate, and the process is complete. The greatest precautions are taken to prevent contamination. Turbidity can be overcome by filtration. Five minims of this extract, diluted, constitutes he dose for subcutaneus injection. The most notable effects of the injection are an increase in the frequency, strength, and fulness of the pulse; a feeling of distention of the head; increased perspiration; flushing of the face; occasionally headache; a sense of exhilaration; increased elimination of urine; increase of muscular strength and endurance; improvement of vision; increased appetite and digestive power. Two injections should be given daily, or on alternate days. Dr. Hammond reports that he has successfully employed cerebrin in various affections of the brain and spinal cord, including congestion, neurasthenia, migraine, hysteria, melancholia, hebephrenia, paralysis, neuralgia, sciatica, epilepsy, general paresis. In some cases cardin and testin have also been used. In explanation of the rationale of the method of treatment, it is suggested that in health every organ separates from the blood the special pabulum that is essential for its perfect nutrition and function, while in disease this selective action is perverted or lost. By supplying artificially, in cases of disease, the special product of the organ at fault, it is hoped to reëstablish the equilibrium.

Diaphragmatic Hernia.—Annequin (*Archiv de Méd. et de Pharm. milit.*, xxi, 1, p. 33) has reported the case of a healthy soldier, who for two years had suffered from recurrent attacks of severe collicky pain, referred especially to the epigastrium, unattended with diarrhea, and usually induced by active muscular exercise, and who, following some excessive physical effort, was seized with pain of unusual severity and with syncope. The pain failed to yield to the local employment of poultices and to anodyne enemata, but continued with paroxysmal exacerbations. In the course of a little while symptoms of intestinal obstruction appeared. The face became drawn, the nostrils distended; the respiration shallow and sighing; the pulse small, compressible and frequent; the extremities cold; the temperature subnormal; the urine deficient in amount, without other abnormality; the breath offensive. There was, however, no hiccough; the abdomen was retracted, except in the epigastrium; there was no evidence of the presence of an abdominal tumor or of hernia in any of the situations in which such a condition is wont to occur. There was no tenesmus, and anus and rectum presented no lesion. The abdominal pain was intense, but intermittent, and localized deeply in the epigastrium. Neither flatus nor fecal matter had been passed by the bowel for three

days. Liquids ingested were rejected at once. From time to time there was vomiting of a bilious fluid that had a fetid odor. The heart presented no abnormality. The respiratory movement was thoracic and restricted; the vesicular murmur was enfeebled. As the nature and situation of the obstruction could not be determined, and as the condition of the patient was considered too grave for operative interference, symptomatic treatment was instituted. Four days and a half after the onset of the attack, and thirty-six hours after entering the hospital, the patient succumbed. At the post-mortem examination a knuckle of the large intestine, at the junction of the transverse and descending colon, together with a portion of omentum, was found to have made its way through an opening in the left leaflet of the diaphragm. The bowel was situated behind the gastro-splenic omentum and in front of the kidney, and lay between the heart and the adjacent lung. The omentum had formed adhesions to the upper surface of the diaphragm and to the pericardium. Reduction could not be accomplishsd by simple traction. The stomach occupied a vertical position, and was twisted upon its axis. The duodenum was flattened and twisted, so as to be practically impassable.

Poisoning by Sardines.—STEVENSON (*British Medical Journal*, No. 1668, p. 1326) has reported the case of a military officer, twenty-one years old, apparently in good health, who, after making a breakfast of six hot sardines, some toast and coffee, became ill, vomited several times, and on the following day died. At the post-mortem examination the whole body, as well as the mucous membrane of the stomach and bowels, was found emphysematous. Some of the sardines obtained from the box that had contained those that the dead man had taken proved fatal to white mice to which they were fed. An alkaloidal substance obtained from the fish also proved lethal to mice. No characteristic bacteria were found in the sardines, in the gastric or intestinal contents, or in the liver. Animals treated with fragments of the liver and of the stomach succumbed. An alkaloidal substance possessed of toxic properties was obtained from the vomited matter and from the gastric contents.

Measles with Relapse.—STRENG (*Deutsche medicin. Wochenschr.*, 1892, No. 48, p. 1084) has reported the case of a six-year old girl, who for three days had had chilly sensations and impaired appetite, and for twenty-four hours a cutaneous eruption. The temperature was 99.8°, and rose no higher. The eruption was typical of measles. Conjunctivitis, rhinitis, and bronchitis were likewise present. On the seventh day after the appearance of the eruption, a purulent discharge from the right ear made its appearance, the temperature mounting to 101°, but declining almost to the normal in the course of the next two days. The eruption disappeared; the catarrhal symptoms subsided; and the subjective condition was good; when, on the tenth day, the temperature began to gradually rise, on the twelfth day reaching 103.8°, the morbillous eruption reappearing simultaneously; to these manifestations, conjunctivitis, rhinitis, and bronchitis were soon added. On the night of the fourteenth day the temperature declined by crisis, and thereafter convalescence was progressive, though further complicated by an eruption of pemphigus vesicles on the right ear and on the fingers of the right hand.

Actinomycosis of the Lip.—MARI (*Centralbl. f. Bakteriologie u. Parasitenk.*, xii, 24, p. 854) reports that in 1889, Klepzow, veterinary surgeon to the abattoir of Moscow, found beneath the mucous membrane of the lower lip of some slaughtered oxen hard, movable nodules of the size of peas or of small nuts, in the purulent contents of which were actinomyces. The observation was confirmed by other investigators, and among 2000 animals 112 cases of actinomycosis of the lip were discovered. In the months of March, April, May, and June, 1892, among 42,230 head of cattle slaughtered, 1030 presented actinomycosis, which in 621 was seated upon the lip. Section of a nodule disclosed a grayish-yellow point, often softened and purulent at the center, and in the pus the characteristic ray-fungus could invariably be demonstrated.

THERAPEUTIC NOTES.

Chloralose is the name given by HANRIOT and RICHET (*La Semaine Médicale*, 1893, No. 2, p. 14) to a crystalline body resulting from the action of anhydrous chloral upon glucose. The substance is exceedingly bitter, readily soluble in hot water, less readily in cold water. Adults will tolerate from seven and one half to fifteen grains, although from three to six grains are sufficient to produce calm, dreamless, refreshing sleep. The drug was borne by persons that could not take chloral or morphine, or in which these drugs failed to produce sleep.

Pancreatic Juice for Diabetes.—MACKENZIE (*British Medical Journal*, No. 1672, p. 63) has reported the employment of liquor pancreaticus, in half-ounce doses, given three times a day, immediately after food, in the treatment of two cases of diabetes mellitus, with benefit. Languor and lassitude diminished; the thirst lessened; and the quantity of urine became smaller, although the specific gravity of the urine and the percentage of sugar remained unchanged. In a third case similar results were obtained.

For Chancroid.—

℞.—Acid. carbolic. . . . . ʒij.
Camphor. . . . . ʒv.—M.

S.—Apply topically by means of absorbent cotton, twice daily.

—GAMEL, *Journ. d. mal. Cut. et Syph.; Deutsche med. Wochenschr.*, 1893, No. 1.

Sodium Borate in the Treatment of Paralysis Agitans.—SACAZE (*La Semaine Médicale*, 1893, No. 4, p. 14) reports the case of a man, thirty-eight years old, in which the administration of sodium borate in doses of from 15 to 45 grains, in three or four equal parts in the course of the day, was followed by the most striking improvement in the symptoms of paralysis agitans that had developed after a fall upon the shoulder.

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SATURDAY, FEBRUARY 25, 1893.

METHYLENE BICHLORID.

IN his recent admirable work on anesthetics, DASTRE[1] observes that there is a true and false methylene chlorid, and that the true chlorid is not an anesthetic. If we inquire into the grounds of this opinion, we shall be puzzled to account for so dogmatic a statement. We find on examination that there are four different substances laying claim to the same appellation. For the sake of clearness they may be thus enumerated: First, there is the mythelene bichlorid prepared by ROBBINS, and described as "the distillation of chloroform and alcohol on zinc." It seems to be the true anesthetic, and has been used with success by SPENCER WELLS and RICHARDSON in England, and in France by MM. LE FORT and LABORDE.[2] Secondly, there is a mysterious substance, of English manufacture, which PROF. REGNAULT found on analysis to be a mixture of chloroform and methylic alcohol.[3] Believing this mixture to be the true anesthetic, he prepared a pure specimen, of which the proportions were 4 volumes of chloroform and 1 volume of methylic alcohol. His two colleagues, POLAILLON[1] and LE FORT tested it in their practice, and judged it dangerous. It is, in fact, not sufficiently powerful to produce insensibility in men. For women it answers tolerably. In physical properties it differs markedly from the English preparation of ROBBINS, which, as we have said, seems to be the real anesthetic, though not the real methylene chlorid. The real chlorid, of which the formula is $C_2H_2Cl_2$, was isolated by REGNAULT and VILLEJEAN,[2] and two careful physiologic studies revealed its utter uselessness as an anesthetic. We cite, for the light they throw on certain cases of death from the commercial drug, a few sentences from the last excellent paper of REGNAULT and VILLEJEAN: "At the present time we can assert, basing our opinion on the results of more numerous and more precise observations, that if chloroform brings on, at the same time as the general anesthesia, a state of muscular relaxation most useful in surgical operations, methylene chlorid on the contrary produces, during the inhalation and also after the inhalation, a state of (muscular) contraction both temporary and permanent, alternating with cries of a choreic and epileptiform character."

Such, indeed, are the symptoms noted in some cases of poisoning. Is it, then, to be thought that poisoning is sometimes or often caused by the real methylene chlorid? Such an assumption, we confess, is somewhat hazardous, for we have not been able to discover that the true chlorid is ever made in its purity except in the savant's laboratory. We lay stress upon this matter, first, because the question serves to make clear an element of uncertainty and danger in the use of the commercial drugs which profess to be methylene chlorids, when they are nothing but mixtures, of shifting and doubtful constitution. And lastly, some of these mixtures are definitely known to possess dangerous impurities, as DR. HENRY E. ARMSTRONG[3] has shown.

Having thus distinguished the four different substances (now) called by courtesy methylene bichlorid, of which we have any particular experience, let us come to the essential part of the whole question.

If we look now into the history and nature of ROBBINS's drug, we shall meet with one of the most singular facts in the study of this rather obscure

[1] A. Dastre: Les Anesthétiques, Paris.
Bulletin de l'Acad. de Méd., 1889, 3me sér., t. xxii, p. 35; t. xxi, p. 900.

[3] Ibid., 1884, 2me sér., pp. 568, 580.

[1] Ibid, 1889, t xxi, p. 897

[2] Société de Biologie, 1884, 8me sér., p. 156; Bull. de Thérapeutique, 1886, tome cx, p. 494.

[3] Lancet, vol. ii, 1884, p. 935.

subject. Although this drug is an undoubted mixture,[1] yet it differs in appearance and effect from a chemically pure mixture of chloroform and methylic alcohol prepared by REGNAULT, and well known in France as the *liqueur de Regnault.* On this interesting subject LE FORT says: "Whatever may be the results of chemical analysis, I affirm that the mixture of M. REGNAULT is not identical with the liquid I procured from London; the physiologic results are too different."[2] In another place he gives an account of his unsatisfactory experience with REGNAULT'S mixture. On the other hand, in speaking of the English drug, which he had used repeatedly during a period of six years, he is scarcely less reserved in his praises than SPENCER WELLS.

Here is a *résumé* of LE FORT'S last experiences: methylene bichlorid was employed 33 times, of which 16 cases were in men and 17 in women.

Results in men:	
Mean quantity used	15 grams.
" duration of the initial stage	13 minutes.
" " " anesthesia	32 "
Agitation, light	9 cases.
" severe	1 case.
Vomiting during the operation	1 "
" after " "	3 cases.
Results in women:	
Mean quantity used	10 grams.
Initial stage	8 minutes.
Duration of the anesthesia	32 "
Agitation, light	2 cases.
" severe	1 case.
Vomiting during the operation	1 "
" after " "	3 cases.
Fifty-eight cases with *chloroform* gave the following results:	
Mean duration of the initial stage	7 minutes.
" " " anesthesia	22 "
Agitation, light	23 cases.
" severe	7 "
Nausea and vomiting during the operation	6 "
" " " after " "	22 "

Whether these results show absolutely that methylene bichlorid is superior to chloroform as an anesthetic, it is not necessary to say. No one, as far as we know, has ever denied that it is safer than chloroform; and, as safety is in the long run the only point in these matters well worth discussion, we shall examine a little further the evidence for the English drug. SIR SPENCER WELLS, by far its most important witness and most plausible panegyrist, says: "I have now done ovariotomy 1138 times, and with the exception of about ten,[1] where for some reason or other chloroform was used, chloromethyl was the anesthetic employed." Again: "Its chemical composition shows it to differ from chloroform only in containing one equivalent less of chlorine,[2] and in a letter to LE FORT, SPENCER WELLS doubts whether the preparation of ROBBINS is, chemically speaking, true methylene bichlorid; but practically it is the best and surest anesthetic he has ever used.[3] It must be given freely diluted with air, a task accomplished best by means of JUNKER'S inhaler. In this way but from 2 to 4 per cent. of vapor is administered. To neglect of this rule he attributes a fatal accident at the Plymouth Hospital."[4]

These quotations show that SPENCER WELLS'S success, setting aside his personal ability and skill, has depended first upon some inherent excellence in ROBBINS'S drug, an excellence due perhaps to its containing less chlorine than chloroform, and to its nature as a mixture; and, secondly, upon the rigid observance of sound technique in the administration. Upon taking care, as we have ourselves noted personally and in our reading, depends all success in the use of anesthetics; and many malapert operators, by ignoring some sound method of manipulation, have hindered the development of practical skill—especially, it is to be added, in the administration of chloroform. In the present instance the care we wish to insist upon is, as experience shows, to be exercised in the choice of the means of inhalation. It is a matter of vital importance to afford a regular and graduated amount of vapor to the patient.

There have been not a few deaths from methylene bichlorid. In the *Lancet*, during the last ten years, there are accounts of seven, and this number, it is safe to say, represents but a fraction of the truth. DASTRE, we think, has summed up very shrewdly the defects of this agent, and we are disposed to concur with him in his disparagement of it. According to him, it possesses the defects, and not all the virtues, of chloroform, and deaths from it are much more frequent than its advocates admit. Certainly it is hard to have confidence in a mixture in many ways dubious—a mixture that seems to differ, though for the better, from one of the

[1] Cf. Prof. Gutzeit: Deutsche med. Zeitung, 1887, p. 749.

[2] Bull. de l'Acad., t. xxi, p. 889.

[1] Diagnosis and Surgical Treatment of Abdominal Tumors, London, 1885, p. 77.

[2] Modern Abdominal Surgery, 1891, p. 8.

[3] Bull. de l'Acad., 3e. ser., t. xxii, p. 35.

[4] Lancet, 1890, vol. ii, p. 898.

same proportions made by a highly accomplished chemist. Yet it must be said in favor of Robbins's mixture, and others like it, that the worst it has apparently done is to cause vomiting and unrest. We say "apparently," for the reported circumstances of fatal cases, with the single exception of the choice of an inhaler, are too obscure to be handled.

TUBERCULOUS INSPIRATION-BRONCHO-PNEUMONIA.

One of the most alarming manifestations in the clinical history of a case of pulmonary tuberculosis is hemoptysis, which may be of varying degree, from a slight admixture of blood with the sputum to a pint or more. The complication is of itself rarely fatal; occasionally, however, it causes death by asphyxia, the patient literally being drowned in his own life's blood.

At one time in the past a belief was current that in some instances pulmonary tuberculosis developed in the sequence of hemorrhage from the lungs. It required the elucidation of the etiology of tuberculous processes in general to finally demonstrate the fallacy of this view. Now, it is universally admitted that in such cases the pulmonary lesion was primary, not attracting attention until the occurrence of the hemorrhage.

Bäumler (*Deutsche medicin. Wochenschr.*, 1893, No. 1, p. 1) calls attention to a form of broncho-pneumonia that may occur in cases of pulmonary tuberculosis from the inspiration of blood and the contents of pulmonary cavities (including pyogenic cocci and tubercle-bacilli), in conjunction with hemoptysis. A similar condition may arise in the absence of hemorrhage, or in connection with an ordinary bronchiectatic cavity, but under these circumstances the course of the case is generally much less unfavorable.

The tuberculous inspiration-broncho-pneumonia may occur in cases in which a pulmonary lesion is not even suspected, or in which a tuberculous lesion has undergone retrogressive change. It is usually preceded by some form of active physical effort, and commonly pursues a rapid course, presenting the characters of an acute infectious disease, and leading to a fatal termination. The first manifestation is usually hemoptysis, which may persist in moderate degree for a number of days. The febrile movement is decided, and the temperature usually reaches a considerable height. Dyspnea is marked, and cyanosis becomes pronounced. On physical examination the signs of a diffuse broncho-pneumonia will be found. Careful examination of the sputum will detect tubercle-bacilli. After death a tuberculous cavity, containing a ruptured blood-vessel, will be found in one or in both lungs, and, besides, a lobular pneumonia; miliary tubercles may also be present, but not as a rule in any considerable number.

The clinical picture differs from that of enteric fever in the abruptness of onset, in the rapidity of course, in the period at which the pulmonary symptoms appear, and in the occurrence of hemoptysis. A knowledge of the previous history is important. Tuberculous inspiration-broncho-pneumonia sets in more abruptly than acute miliary tuberculosis; pursues a more rapid course; is attended with a higher febrile movement; cyanosis appears earlier; and the physical signs are distinctive. From ordinary broncho-pneumonia the tuberculous variety differs in the occurrence of hemoptysis and in the presence of tubercle-bacilli in the sputum.

The prognosis is always dubious, and as a rule unfavorable.

The treatment is purely prophylactic. Patients with pulmonary cavities, and with tubercle-bacilli in the sputum, should be cautioned against indulging in too active physical exercise; and as the existence of cavitation is not always demonstrable, great circumspection should be used in advising pulmonary gymnastics. These patients should avoid irritating atmospheres. When a tendency to hemoptysis manifests itself, they should be enjoined to observe the most perfect rest.

EDITORIAL COMMENTS.

Mixed Tuberculous and Typhoid Infection.—It is a well-known clinical fact that the differentiation of typhoid fever and tuberculosis (particularly of the acute variety) is sometimes exceedingly difficult; and that in a given case, in which the symptoms and physical signs of tuberculous disease become perfectly clear after an attack of what was supposed to have been typhoid fever, it may be impossible to say positively whether the febrile affection acted merely as a predisposing factor in the development of the secondary condition or the original primary disease was really tuberculous.

As an illustration of the difficulties of diagnosis, a case recently reported by Senator (*Charité Annalen*, 1892, xvii, p. 372; *Schmidt's Jahrb.*, 1892, No. 1, p. 29) is most interesting. A man, twenty-one years old, without hereditary predisposition, for a week presented

pulmonary symptoms and moderate fever; and for the next four weeks a continuous febrile movement, together with pain in the right iliac region and gurgling, rose-spots, enlargement of the spleen, liquid stools, and diazo-reaction of the urine. Examinations failed to disclose the presence of either tubercle-bacilli or typhoid-bacilli. The diagnosis lay between enteric fever and miliary tuberculous, and finally both were suspected. Death took place after an illness of five weeks. At the post-mortem examination the lesions of pulmonary and intestinal tuberculosis were found.

Cases are not wanting in which typhoid fever has occurred in a tuberculous patient, but the records are scanty (if any at all exist) of cases in which the simultaneous existence of the dual infection has been demonstrated. Without giving the clinical history, Kiener and Viellard (*Compt.-rend. hebdom. des Séances de Soc. Biologie*, 9. sér., tome v, No. 1, p. 14) report such a case that terminated fatally. At the post-mortem examination the lesions of an acute, disseminated, granular tuberculosis were found in lung, pleura, peritoneum, and pia mater. The lower third of the ileum presented the typical ulceration of third week of typhoid fever, while higher up in the bowel were the granulations of the tuberculous process. Bacteriologic examination of material obtained by puncture of the spleen disclosed the presence of bacilli that correspond in all particulars with typhoid-bacilli.

No Code.—The New York State Medical Society has adopted the following resolutions:

"*Resolved*, That the Society reserves to itself the right to punish its members for any unprofessional conduct.

"The determination of what shall be considered unprofessional conduct shall rest with the Society. If at any time charges are preferred against a member of the Society, these charges are referred to a committee which already exists for a similar purpose. This rule shall take the place of paragraph eight of chapter six of the by-laws, as well as the rules adopted by this Society in February, 1882.

"*Resolved*, That the Society deems it unwise, at this time, to appoint any committee of conference with the American Medical Association upon the subject of medical ethics, as requested by that distinguished body; but the Society ventures to express the hope that the American Medical Association, at no distant day, will take such action as will remove the merely technical obstacle to the most cordial coöperation between the two societies."

Whether or not this action be politic and judicious and ethical remains to be tested by the logic of events. It is a sort of *j'y suis, j'y reste* argument, about which the logic of controversy is of little use. There has certainly been too much controversy already. Let us quit arguing and try to unite in harmony. It is certainly a fact of profound significance for the American medical profession, and one that it behooves us all to consider most carefully and seriously.

The Physician and the Sectarian.—In a most intelligent paper recently read before the Homeopathic Medical Society of the State of Pennsylvania, Dr. Clarence Bartlett (*Hahnemannian Monthly; The Clinical Reporter*, vi, i, p. 20) recommends, in the treatment of the conditions that predispose to the occurrence of apoplexy, glonoin (nitro-glycerin), arsenic, arsenic iod., phosphorus, belladonna, and nux vomica. These, together with "abstinence from meat-diet and alcoholic beverages, moderate indulgence in eating, a quiet life, the free drinking of water, the avoidance of exciting emotions," are considered "simply indispensable." "When collapse is not present, the application of ice to the head has a beneficial effect, as it serves to excite contraction of the cerebral vessels. When collapse is present, mustard plasters to the nape of the neck have been recommended by Gowers as of value in inducing reflex contraction of the arteries." In the apoplectic attack, aconite, glonoin, opium, and other remedies are recommended to meet various indications. Now, had the article from which we quote appeared in any other than a self-styled homeopathic journal, it would scarcely have been possible to have discerned that the writer was a so-called homeopath. The various measures recommended are those that are practically employed by all honest physicians. The question of homeopathy, the question of dogma, does not arise. The fact is that the true physician will use any remedy, whatever its source, whatever its mode of action, that will alleviate suffering or cure the disease; it matters not whether the use be designated allopathic, homeopathic, eclectic, or what not. It is a cause for sincere regret that any body of men will permit their sphere of usefulness to be restricted by blind adherence to a dogma or will be parties to at least tacit deception by its pretended acceptance.

Carbolic Acid as an Antiseptic.—The swing of the pendulum is bringing antiseptic surgeons back to the point from which they set out. With the knowledge that wound-complications were almost invariably dependent upon contamination by living matter, efforts were directed to the finding of a body capable of preventing such contamination, without at the same time causing injury. Of all the antiseptics proposed or used, carbolic acid and mercuric chlorid are the two that have shown themselves most deserving of confidence, and the second has been much more largely used than the first. Recent developments have, however, tended to demonstrate that mercuric chlorid is not the perfect antiseptic that is has measurably enjoyed the distinction of being; and now comes the interesting announcement that Sir Joseph Lister (*British Medical Journal*, No. 1674, p. 163) has practically repudiated mercurial solutions for antiseptic purposes in surgical procedures, and has returned to the use of carbolic acid, which, in the strength (1:20) in which it is ordinarily employed, he shows to be germicidal to most of the noxious organisms.

A Lay View of Dispensary-abuses.—The general public, according to the New York newspapers, is awakening to the fact that the medical treatment of 300,000 or more people in one city by charity in the year 1890 is a fact worth considering. One writer takes the curbstone view of the question, and with surprisingly poor but popular logic, he argues that if the doctors are willing to pauperize themselves and degrade their profession, what is that to the public? Let the public most cunningly take all it can get without pay and without thanks. Whether to get clinical material or to beat rivals in the statistical showings, or from whatsoever motive, matters not. The indiscriminately free dispensary, it is moreover averred, is also justified by the fact that the out-and-out quack

is thus headed off. This is regardless of the fact that the quack were better beaten by public laws that the public will not allow to be passed, and also that the more preposterous the dispensary-abuse, the more outrageous the quackery rampancy.

Popularization of Medical and Hygienic Knowledge. — When one considers that quackery and impostures of all kinds, together with the diseases on which they thrive, are most luxuriantly manured by popular ignorance of physiology, hygiene, and medicine, the true physician must sympathize with every sincere attempt to enlighten the people in regard to these matters. In this connection we wish to direct attention to the work being done by Dr. Remondino in *The National Popular Review*, the specific scope of which is the field of preventive medicine and popular hygiene. Every month this tasteful and tactful periodical contains excellent articles designed to clarify the minds of its readers as regards sanitation, sound principles of dress, personal and communal hygiene, and especially with enlightened views as to the true aim and practice of the physician. As a plebificator of scientific medicine it is unrivaled.

Dr. Billings's Estimate of the Medical Profession as a Calling.—Every physician who loves his profession will be delighted to read the manly and sympathetic plea for it made by Dr. Billings in the last number of *The Forum*. Medicine does not bring the fame and money that may be gained in other callings, but it unites the intellectual, the moral, and the practical exercises of the mind in a happy and satisfying manner equalled by none other. Other motives than those of the love of humanity, of science, and of self-respect are often enough those of the medical student and practising physician—it does not need Philistinic criticism to tell us that—but in other professions the other motives and the Philistine himself are more at home than in ours.

The Sneak Advertiser, according to the resolution of the San Francisco County Medical Society, is not a person wholly above suspicion. He is to be expelled, if his name "appear in the daily press describing his professional powers in an unprofessional manner and he cannot give a satisfactory explanation" of the fact. That the wicked reporter or injudicious assistant was not allowed to be put into service as a scapegoat is shown by the Society's action in expelling four such offending members. There is evidently an end and even a reversal of the (untrue) dictum that "Manners and morals grow uniformly worse as one proceeds Westward."

Publication of Papers Read at the Pan-American Medical Congress.—Physicians are often prevented from giving their best literary work to societies, associations, and congresses because of the rule that papers contributed may not be published elsewhere than in the Transactions or special Journal of the society. This rule often works to the injury of the society and of the contributor. We are glad to learn that papers read at the Pan-American Congress may, after the meeting, be published in full in whatever journal the author pleases.

The Excelsior College of Medicine, a bogus institution, driven out of Massachusetts, has come to grief in New York, where its proprietor, a "Doctor" Booth, sold a *Herald* reporter a diploma for $50, and was the next day put in jail. If the *Herald* could secure them, and would devote an equal amount of space to publishing the examination-papers of some of the "legitimate" M.D.'s of some of the "reputable" medical colleges, it would do a still greater service to the community, and to medicine.

SOCIETY PROCEEDINGS.

THE NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, held at the New York Academy of Medicine, February 7, 1893.

DR. ALFERD WIENER presented a "Subacute Case of Unilateral Bulbar Palsy." The patient was a young man of seventeen years. The family history was negative. Nearly two years previously the glands on both sides of the neck, in the region of the sterno-cleido-mastoid muscles, began to enlarge. More than a year later one of these glands on the right side suppurated, and the pus was evacuated. Soon after this, the remaining glands began to give rise to so much discomfort that those on the right side were removed, together with a large portion of the sterno-cleido-mastoid muscle. A little later the glands on the left side were removed. Examined microscopically, the glands proved to be tuberculous. After two months more it was noticed that the patient's tongue, on protrusion, deviated to the right side; this was followed by hoarseness and difficulty in swallowing, and later on by distinct atrophy of the middle half of the tongue. On electric and laryngoscopic examination it was found that there was complete right-sided palsy, involving the tongue, soft palate, pharynx and larynx, together with paralysis of the sterno-cleido-mastoid and upper portion of the trapezius muscles. The lesion in this case, it was pointed out, might be situated at a point just external to the exit from the skull of the pneumogastric and spinal accessory nerves, namely, just behind the angle of the jaw; or on the surface of the medulla; or it might be nuclear. All the facts in this case lend support to the view that the lesion is a tuberculous one, involving the nuclei of the nerves that govern the palsied parts. These groups of cells form the conjoined nuclei of the spinal accessory, vagus, and hypoglossal nerves, and a very localized lesion in this part of the medulla would be sufficient to affect them. The involvement of the trapezius and sterno-mastoid muscles is probably due to injury to the nerve supplying them, while the laryngeal symptoms may be accounted for by a paralysis of the stylo-hyoid muscle (due to pressure from an enlarged gland) or by the unantagonized action of the muscles on the left side of the throat.

DR. GEORGE W. JACOBY presented a case of "Complete Atrophy of the Tongue with other Nuclear Symptoms." The patient was a female, thirty years old, whose mother had died of pulmonary tuberculosis. Her husband's sister had more recently died of the same affection, and had been nursed by the patient. For two months there had been gradual impairment of vision, which was found to be due to a slight atrophy of both optic nerves, and under internal treatment disappeared. The patient had also suffered from violent headaches, which disappeared

with the loss of sight. For three weeks there had been difficulty in swallowing and speaking. Vomiting occurred every morning on rising. At the first examination the tongue deviated to the left and there was marked atrophy of its right half. The uvula was deflected to the left, and there was paralysis of the left side of the soft palate. The patient had enlarged cervical glands. At a later date the atrophy of the tongue and soft palate became complete. Paralysis of the internal and external ocular muscles of the left side also developed. The case was thought to be one of progressive nuclear paralysis.

DR. B. SACHS stated that in Dr. Wiener's case a chronic nuclear condition must be excluded on account of the rapid progress of the symptoms, and because they had remained strictly unilateral. In Dr. Jacoby's case an element of doubt enters into the diagnosis, because of the rapid progress of the symptoms. They seemed to indicate the presence of some active lesion, specific or tuberculous.

DR. THEO. H. KELLOGG read a paper on "Modifications of Respiration in the Insane." To facilitate the study of these modifications, he grouped them as follows: A. Modifications of respiration as regards frequency, depth, rhythm, and sound. B. (1) Spasmodic expiratory modifications, such as occur in laughter, crying, sneezing, coughing, and snoring. (2) Spasmodic inspiratory modifications, as in singultus, chasmus, and laryngeal crises. C. Dyspneic modifications.

DR. C. A. HERTER made a report of a case of "Sarcoma of the Cervical Spinal Cord. Autopsy." The patient was a merchant, twenty-nine years old, who had noticed a loss of sensation, beginning as numbness, on the ulnar side of the little finger of the right hand. Soon the entire little finger was involved, and later the ring finger and the ulnar side of the middle finger. At the same time the anesthesia extended upward along the hand. In the course of three months the anesthesia had passed up the ulnar side of the forearm and arm, and had reached outward over the hand as far as the thumb. Pain also appeared on the ulnar side of the right forearm and hand; slight and occasional at first, later severe and of increased duration. This was followed by loss of power, first in the flexors of the fingers, then in those of the forearm. About five months after the first symptoms were noted, there developed atrophy of the first dorsal interosseous muscle. The wasting soon involved the muscles of the thumb and hypothenar eminence, and the flexors of the forearm. In about the eighth month the pain abated greatly. During the period of severest pain, the entire right arm became edematous. On electric examination made thirteen months after the appearance of the first symptoms, loss of faradic irritability in the right arm, and in all the extensors and flexors of the wrist and interossei, was found. Tactile sensation and the pain-sense were entirely lost along the ulnar border of the arm to the axilla, and were greatly impaired along the radial border as high as the shoulder. The temperature-sense (which was only roughly tested) appeared to be quite lost in the arm. There was almost an entire loss of the muscle-sense; the patient had no sense whatever of the position of the fingers, hand, and arm. The surface of the right arm was pale and much colder than that of the left. In the left hand and arm, power and sensation were apparently normal. Both legs were a little weak. Equilibrium was maintained without difficulty. The knee-jerks were exaggerated, in the greater degree on the right side. The power of the sphincters was unimpaired. There was no vertebral deformity, and no tenderness on pressure over any of the cervical or upper dorsal spines. Sight was unimpaired. The pupils reacted normally to light, and in accommodation. The right palpebral fissure was distinctly smaller than the left, and the right lid drooped a little. On examination of the chest there was found dulness on percussion over the upper part of the right side. The temperature was 101°; pulse, 100; respiration about 30 per minute. In the course of two weeks after this examination, the right leg became much weaker than it had been, and pain and numbness extended gradually down the entire left arm. Loss of power was also detected in the left leg. There was temporary retention of urine. In the course of a month a tense swelling was observed over the outer extremity of the right clavicle, and extending down into the axilla over the front of the shoulder. In the course of two weeks this tumor grew to the size of a child's head, became very tense, and was covered with greatly distended veins. The patient grew rapidly worse. Incontinence of urine and feces set in, and the breathing became labored, owing to paralysis of the thoracic muscles. There was total loss of sensibility extending as high as the crest of the ilium upon both sides, with bilateral impairment of sensibility as high as the third rib. Large bedsores appeared, and, sixteen months after the first symptoms, the patient died from exhaustion and respiratory failure.

A partial autopsy was made, and a mass removed from the clavicle, and another from the upper and posterior part of the thoracic wall. A number of tumors occupied the posterior and inner aspects of the right upper chest, displacing the lung. Some of these masses appeared to grow from the clavicle, others from the vertebræ, but their relations could not be distinctly made out. The specimen obtained from the spinal cord was five inches long, and extended from the eighth cervical to the seventh dorsal segment, both inclusive. Sections were made from the eighth cervical, and first, second, and third dorsal segments. The tumor involved at this level nearly the entire right half of the cord, and encroached anteriorly upon the left anterior column of the cord. Posteriorly, it did not pass quite to the posterior horn. The ganglion-cells in the region of the tumor had undergone partial or entire destruction, or were in some instances apparently replaced by small groups of spindle-shaped connective-tissue cells. In structure, the tumor was an exceedingly vascular spindle-celled sarcoma. Sections made from the mass, from the clavicle and thoracic wall, showed it to be a fibro-sarcoma.

While the anatomic diagnosis presented no difficulties, the pathologic diagnosis was made with some hesitation. The existence of signs of pulmonary consolidation, muco-purulent expectoration, hectic temperature, rather rapid emaciation and night-sweats, all suggested a tuberculous process, and the diagnosis of a secondary tuberculous tumor of the cord was thought to be justified. The alternative diagnosis was sarcoma, but the accuracy of this appeared improbable. An examina-

tion of the sputum was not made. Dr. Herter had collected twenty-six cases of sarcoma of the spinal cord, which he had compared with cases of massive tubercle of the cord. This study had shown that (1) Sarcoma of the spinal cord occurs with about equal frequency in the two sexes. (2) Sarcoma of the spinal cord is essentially a disease of adult life; massive tubercle, on the contrary, is a disease of adolescent and early adult life. (3) Etiologic factors in the development of sarcoma of the spinal cord are practically unknown. (4) In three cases of sarcoma, the first symptoms appeared during pregnancy. (5) Pain appears to be the earliest and most prominent symptom in four-fifths of the cases of sarcoma of the cord. (6) In sarcoma, the course of the disease is, in general, much slower than in tubercle.

THE PRESIDENT said that while sarcoma in general is more commonly met with in persons under the age of thirty, sarcoma in the nervous system is decidedly more frequent in adult life. He has recently collected 600 cases of tumor of the brain (300 in adults and 300 in children), and among these there were 34 cases of sarcoma in children, and 157 in adults. He was much interested in the collection of cases made by Dr. Herter, and thought it would be well to carry the investigations further and determine how many of these cases would have been suitable for operative interference.

DR. GRAEME M. HAMMOND expressed the opinion that the symptoms referred to the side of the body opposite to that invaded by the growth, might have been due to degenerative changes in the opposite side of the cord, caused by a cutting off of the blood-supply, or the commissural fibers may have been interfered with sufficiently to produce the symptoms.

DR. HERTER added that the case was seen by him at too late a day to be operated on.

DR. GEORGE W. JACOBY read a paper on "The Motor Disturbances of the Heart of Nervous Origin." He stated that in a large number (probably in more than one-half) of the persons who seek advice on account of some motor disorder of the heart, no anatomic lesion is clinically discoverable, and no mechanical cause can be found. In such cases it is reasonable to seek for the cause of the altered function in some disorder of the complicated nervous apparatus of the heart. The action of the heart may be intermittent, irregular, abnormally slow (bradycardia), or abnormally frequent (tachycardia).

Intermittency may be true or false; in the latter form the pulse fails, but the heart is regular, while in the former the heart actually drops a beat. In irregularity of the heart's action the number of pulsations varies from minute to minute, or the pulsations vary in height and tension. These forms of arhythmia may be persistent or only temporary: when persistent, they are probably due to some organic disease of the heart; when they are temporary, they are either dependent upon defective constitution of the blood, or are purely neurotic. Toxic influences associated with sexual excesses, and with the excessive use of tea, coffee, tobacco, and alcohol, are potent factors in the production of arhythmia. Intermittency may be due to even the moderate use of alcohol.

Slow pulse, or bradycardia, is a term applied to cases in which the pulse falls, according to some authorities, below 60 per minute, or according to other writers, below 40. Slow pulse should be regarded as a symptom only. It may be due to a variety of causes. Bradycardia should be limited to such cases in which the infrequency of the pulse is due to a disorder of innervation. A slight reduction in the frequency of the pulse is common in disturbances of the digestive tract.

In paroxymal tachycardia the attack is always sudden in onset, and usually unexpected. The pulse is increased from normal to from 180 to 240 per minute, or even to 300 per minute, according to some observers. There is no disturbance of rhythm and no intermittence. The heart beats in a strong and energetic manner, and in direct contrast to its action is the extreme diminution of arterial tension. The cessation of the attack is as sudden as its onset. The paroxysms vary in duration from a few minutes to several hours, and occasionally last even for days. The intervals between the attacks are irregular. During an attack the excretion of urine is generally diminished; it may be followed by the passage of a large quantity of clear, limpid urine. The etiology of these cases is obscure. Psychic influences, fright, errors of diet, bodily exertion, have all been assigned as causes. Tachycardia is an affection of adult life, and the best established causes are bodily and cerebral overwork. In these cases it seems probable that the condition is a bulbar neurosis.

DR. J. W. BRANNAN said that some years ago, when he made a study of the pathology of tachycardia, he was inclined to believe that the condition was due to a bulbar neurosis, but he afterward rather favored the suggestion that the cause of the trouble was to be found in the heart-muscle. Up to four years ago, only four autopsies were recorded, and in all of these the nervous system was found intact; in only two was the heart-muscle examined, and in both cases an extensive development of fibrous tissue was found in the wall of the left ventricle. This may have been due to the rapid action of the heart. In another case, in which the disease had existed for only three months, there was an extensive development of fibrous tissue throughout the wall of the left ventricle, in the trabeculæ, and the papillary muscles. The only objection to this theory lies in the fact that there are so many cases of myocarditis without any history of tachycardia. This has been accounted for by the explanation that certain portions of the heart-muscle are tolerant, while other portions are intolerant, and involvement of the latter gives rise to tachycardia. The intolerant regions are especially found in the inter-ventricular wall and the papillary muscles.

DR. HERTER referred to a case of paroxysmal tachycardia in a man who is a sexual neurasthenic, and suffers from intestinal indigestion. Each attack lasts four or five hours, and is generally induced by some indiscretion in diet. The urine passed after such an attack contains in large amount the products of intestinal putrefaction. It is an interesting question whether the attacks are due to these poisonous substances, or perhaps to mechanical causes—such as distention of the colon, or other parts of the intestinal tract.

Susceptibility to Homatropine.—A correspondent writes us concerning a case almost identical with that published in THE NEWS, January 21, p. 78.

NEWS ITEMS.

Hardy, the distinguished French dermatologist, died recently.

The New York Therapeutic Review is the name of a new quarterly edited by Dr. Paul Gibier, who will be supported by a notable list of collaborators.

The Philadelphia Neurological Society.—A stated meeting will be held February 27, 1893, at 8.15 P.M. Dr. C. L. Dana, of New York, will read, by invitation, a paper entitled "Some Studies of the Nature and Symptoms of Shaking Palsy, with the Report of an Autopsy."

The Eleventh International Congress of Medicine will be inaugurated in Rome on the 24th of September, 1893, and will close on the 1st of October.

Any physician may become an active member of the Congress by fulfilling the conditions of membership, inscribing his name, and securing his admission ticket.

Scientists of other professions, who, through their special studies, are interested in the labors of the Congress, may acquire the rights and assume the duties of active members, and participate in the work of the Congress, both by communications and discussions.

The fee for admission to the Congress is twenty-five francs, or five dollars.[1] It entitles to a copy of the *Transactions* of the Congress, which will be forwarded to the members immediately after publication.

The character of the Congress is strictly and exclusively scientific.

The work of the Congress will be divided amongst nineteen sections; every member is requested to indicate, on paying his admission fee, the section in which he desires to be inscribed.

The provisional committee will arrange the appointment, in the opening session, of the permanent officers. They will be a president, three vice-presidents, a number of honorary presidents and secretaries. Each section will elect, at its first meeting, its president and a certain number of honorary presidents, who shall alternately take the chair during the session. Some of the secretaries will be chosen from among the foreign members, in order to facilitate the recording both of communications and of discussions in the different languages.

There will be daily sessions, either general or sectional. The times and number of the general sessions, and the business to be transacted in them will be arranged by the President of the Congress.

The general sessions are reserved for (*a*) the consideration of the common work of the Congress and of its common interests, (*b*) addresses and communications of general interest and importance.

The addresses in the general sessions, and in such extraordinary sessions as may be arranged, will be delivered by members chosen by the committee for the purpose.

Papers for and communications to the Congress must be announced on or before June 30, 1893. A brief abstract of every paper and communication, with their conclusions, must be sent to the committee on or before July 31st. All of them will be printed and distributed to the members, by authority of the President. Such as arrive after that date cannot be expected to find a place on the regular order of business, and will be accepted only if time will permit.

The business of the sections will be arranged by their presidents, who will also determine the hours of meeting, avoiding those reserved for the general sessions. Two or more sections may hold joint meetings with the consent of their presidents. There will be no vote on scientific questions.

Fifteen minutes are allowed for the reading of a paper or communication. In the discussion every speaker can have the floor but once, and for five minutes only. To close the discussion the author of the paper is allowed ten minutes. Additional time may be given him by the president, by special resolution of the section, if the importance of the subject under discussion appear to require it.

The manuscript of all addresses, papers, and communications read either before a general session or a section must be handed to the secretary before the close of the meeting. A special committee on publication, appointed by the president, will decide which or what part of them shall be published in the *Transactions* of the Congress. Such members as participated in the discussions are required to hand to the secretaries their remarks, in writing.

The official languages of the session are Italian, French, English and German. The regulations, programs and daily bulletins will be published in these four languages. During the meetings, however, a member may be permitted to use, for a brief remark, any other language, provided some member present expresses his willingness to translate such remarks into any of the official languages.

The president directs the discussion according to the parliamentary rules generally obeyed in similar assemblies.

Persons not classified under Article 3, who are interested in the labors of a special section, may be admitted by the President of the Congress. They will receive a special ticket on paying their admission fee; will not be entitled to a copy of the *Transactions*, and cannot speak in the general sessions or in any section other than that for which they were inscribed.

The President may invite or admit students of medicine to attend and to listen. They will be given a special admission ticket, free of charge.

Arrangements have been made with the different Italian and foreign railway and navigation companies, in pursuance whereof special reduced prices have been granted on the steamers and railways of the countries which the members of the Congress are to traverse.

On the occasion of the Eleventh International Medical Congress, an Exhibition of Medicine and Hygiene will be inaugurated in Rome, which will gather all that may practically interest physicians and specialists.

[1] Money order or check to the treasurer, Professor Comm. L. Pagliani, Rome, Italy. Dr. A. Jacobi, Chairman of the American National Committee, 110 West 34th Street, New York, has volunteered to forward applications and fees.

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ORIGINAL ARTICLES.

SOME RECENT CASES OF APPENDICITIS.[1]

BY NATHAN JACOBSON, M.D.,

PROFESSOR OF CLINICAL SURGERY, COLLEGE OF MEDICINE, SYRACUSE UNIVERSITY; SURGEON TO ST. JOSEPH'S HOSPITAL, SYRACUSE, N. Y.

IN presenting a few cases of appendicitis, which it has been my fortune to have recently seen, it is not my purpose to consider in detail this most important pathologic condition. Nor can I hope to place before this Society any facts which may be new. My object is rather to add my observations to existing data. For out of the accumulated experience of all must develop the true pathology and treatment of appendicular disease.

With the presentation, in 1886, of the result of his investigations into the pathology of the appendix, to the Association of American Physicians, Fitz established a new era in our knowledge of these conditions. Since Morton, in the spring of 1887, deliberately cut down upon and successfully removed an ulcerated appendix, and the equally successful undertaking of Sands at the close of the same year, the surgical treatment of the diseased appendix has been completely changed.

The subdivision of appendicitis into many forms only serves to obscure a proper conception of the condition, and render more difficult a decision as to the proper treatment. In a large majority of cases inflammation of the vermiform process is of the catarrhal type, terminating without suppuration. It is not easy to determine with mathematic accuracy what percentage of cases belongs to this class. It has been variously stated that it would include 80, or possibly 95 per cent. This large group would embrace those to be treated by medicinal measures. No one would recommend operative interference for them.

The very fact that such a large number of cases is quite certain to recover in the hands of the physician makes it all the more necessary that he be on his guard not to include among them a single case that might ultimately demand surgical treatment. To determine what cases are to be treated medicinally and those that should be treated surgically will often tax the ingenuity and skill of the physician. I shall deal in this paper only with such cases as may be suitable for surgical measures. To this class belong, first of all, cases in which the inflammation reaches the suppurative stage. As types of the suppurating form, not involving the peritoneal cavity, I desire to refer briefly to two cases:

CASE I.—On the 29th of January, 1892, I was requested by Dr. Breese, of Syracuse, to see with him a man, forty-one years of age, a machinist, with a negative family history, who, twenty-five years previously, had had typhoid fever, and five years later smallpox. He stated that he had had numerous bilious attacks. Preceding these, there would always be pain in the right iliac fossa. This pain would be severe enough to make walking difficult. It would increase in intensity until it prostrated him. Nausea and fermentation of food in the stomach would occur, and he would ultimately be relieved by free emesis and evacuation of the bowels. As long as twenty years previously he recalled having had a tumor form in the right iliac region, which ultimately disappeared. On the 1st of January, 1892, his pain reappeared, but he kept about until the 16th of the month, each day finding walking more difficult, and the pain more severe. A tumor, steadily increasing in size, appeared in the right iliac fossa during the two weeks preceding my visit to him. There was constant fever. The bowels moved once daily. There was anorexia and nausea, but no vomiting. I found very extensive tumefaction, reaching well down to Poupart's ligament, upward as high as the level of the umbilicus, and internally for a distance of three inches. Rectal examination revealed the presence of a tumor. His hygienic surroundings were very poor, and the prospect of care at home no better. He was, therefore, sent to St. Joseph's Hospital on the following day. Upon his arrival we found that during the preceding night there had been a spontaneous rupture of the abscess into the rectum, and all evidence of tumor had disappeared. Pus was discharged for a period of five days, after which the patient's local and general condition constantly improved, and he left the hospital on the 18th of February, thoroughly well.

The statement is usually made that recurrent forms of appendicitis rarely lead to suppuration. This is, I believe, by no means the rule. In this case, I take it, we are obliged to regard his so-called "bilious attacks" as manifestations of recurrent appendicular inflammation. It has been recently said that rectal examination is very valuable in determining at an early period the presence of disease of the appendix. For myself, I have only encountered it very late. Lange and others have operated upon this form of abscess, which the Ger-

[1] Read at the meeting of the New York State Medical Association, November 15, 1892.

mans prefer to call paratyphlitis, by incision through the rectum, with, as a rule, a successful termination.

CASE II.—H. C. H., thirty-eight years of age, was seen in consultation with Dr. J. L. Heffron, July 14, 1892. During the previous winter the patient had been seriously sick with typhoid fever, from which he seemed to have made a very satisfactory recovery. At various times during the past few years he had attacks of severe pain in the right side of the abdomen, associated with nausea and constipation. Nine days prior to my visit he had been seized with severe pain in the bowels, located well down in the right inguinal region. The bowels had moved daily by administering one dram of Rochelle salts each morning. Tympanites was controlled by intestinal antiseptics. Heat applied did not relieve the pain, and was irksome to him. The temperature had been well down, although at my visit it reached 102°. The pulse had usually been about 80. His pain was not at all severe, nor did he really feel sick. After the fifth day a tumor could be mapped out, reaching along the brim of the pelvis from the anterior superior spinous process downward three or four inches. It was very firm, did not fluctuate, and was not at all tender. Neither the condition of the patient nor the tumor seemed to demand active interference. I did not see the patient again until November 22d. There had been a daily rise of temperature. The thigh was drawn upward, and rotated inward. The tumor had grown rapidly in size, was very tense—in fact, too tense to permit the recognition of fluctuation. Immediate operation was advised, and under ether the abscess was freely opened by an incision running one inch above and parallel to Poupart's ligament from its outer third up to the anterior superior spinous process. In carrying the incision into the depth, the peritoneum was incised for the distance of an inch, the omentum protruding. This was speedily closed with catgut sutures. It was estimated that nearly a pint of pus was discharged. The wound was thoroughly irrigated and packed with iodoform-gauze. Daily irrigation with a sublimate solution, and packing with iodoform-gauze, were kept up. The closure of the wound has been very slow, and in fact at this late day there still remains an unhealed sinus with a depth of about one and a half inches, and a transverse diameter of one-quarter of an inch. The general health of the patient has steadily improved, but mentally he is greatly depressed because of his tedious convalescence.

This case is another example of suppuration occurring in a chronic relapsing appendicitis. The vermiform process probably had melted away in the course of the suppurating inflammation. The abscess-cavity, with its thickened walls, evidently stood in the way of prompt repair, and subjected the patient to the annoyance of very tardy recovery, and the possibility of a permanent sinus.

CASE III.—As very strikingly opposed to the slowly-forming pus-collections which are hemmed in by adhesions, and from which the peritoneum is thus protected, I desire to report the history of a patient seen with Drs. Elsner and Didama, October 3, 1891. He was unmarried, twenty-three years of age, a candlemaker. He was very vigorous, and since childhood had never required any medical attendance. On the morning of October 22d he had gone to his work as usual, but at 10 o'clock called upon Dr. Elsner, complaining of pain in the abdomen, which upon examination was found to be distended, rigid, painful on pressure, particularly so at the McBurney point, two inches from the anterior superior spinous process, on a line drawn to the umbilicus. It was learned later, that on the preceding day he had been obliged to return home from his work because of abdominal pain, but finding relief from medicine administered at home, he resumed his work. When first seen by Dr. Elsner the temperature was normal; yet the diagnosis of appendicitis was made. Within twenty-four hours the condition was greatly aggravated. There was constipation, increasing pain, some vomiting, general peritonitis; temperature 102.5°, pulse 96. In the afternoon, when seen by myself, together with Dr. Elsner, it was decided to perform celiotomy. The patient was properly prepared with the usual precautions. An incision along the outer border of the right rectus abdominis muscle was made. There was but little bleeding. Upon incising the peritoneum thick yellow pus appeared. The wound was enlarged, and the cecum exposed. Upon its surface were thick adherent flakes of pus; the omentum was not gangrenous, but partly thickened, and some pus was in the iliac fossa. The appendix was reached without difficulty, lying to the outer side of the cecum, adherent to the surrounding tissues, but easily separated. It was thickly infiltrated, darkly discolored, and upon its free extremity presented a gangrenous ulceration. There was no perforation, nor did it contain any concretion. It was one and three-quarters inches long. After ligation it was cut off, its surface cauterized with concentrated carbolic acid, the diseased surfaces were touched with a strong sublimate solution, a drainage-tube was inserted, around it the packing of iodoform gauze, and the wound partially closed. After the operation the pulse was 130. At 10 P.M., patient was resting quietly. The pulse, however, had gone to 150, the respirations to 30, the temperature to 102.8°. The patient had not urinated voluntarily during the entire day. The following morning the nurse reported that the patient had passed a quiet night. At 10 in the morning the temperature was 102.8°, pulse 130, respirations 30. At 3 P.M. a marked change suddenly came over the patient. The temperature shot up to 105.5°, his pulse to 160; his respirations became shallow; muttering delirium and great depression appeared. When seen by me at 6 P.M. he was unconscious, the pulse flickering, and an hour later the patient was dead.

This very rapid development of ulcerative appendicitis, awakening almost from the outset a septic peritonitis, without any previous manifestations of

disease of the vermiform appendix, is very unusual. That a person should have continued his work after a peritoneal inflammation had developed, and not have presented himself to a physician for treatment, hardly seems possible.

The period at which an operation is performed is not to be designated as early because a few hours or even days have elapsed since the patient has presented himself for treatment. This period cannot be measured by any supposed period of time. An early operation is one performed while the disease involves only the appendix. If peritonitis is present, it matters little whether for its development it has required one hour or one week. The complication is equally serious in either event, and the operation, no matter how soon performed after the appearance of septic peritonitis, is no longer to be regarded as an early operation. Dr. Jacobi has made a very happy exchange of terms by suggesting that operations, to be successful, must be not only early, but timely. Very few cases have recovered in which septic peritonitis has coëxisted. Recently, however, Abbe has reported the successful termination of some of his operations, by making a second incision upon the left side of the abdomen, and in this way establishing thorough irrigation.

CASE IV.—February 10, 1892, I was called by Dr. E. A. Didama to Cortland, N. Y., to see a young man, aged twenty-seven. The patient had never been seriously sick, but for several months complained of a "pain under the ribs" on the right side, on exertion. There never had been an acute attack of pain or fever. He had felt usually well until the morning of the 8th, when he was seized with pain so severe, which he referred to the epigastrium, that he was obliged to stop work. There was only slight elevation of temperature, but great pain and constipation. An anodyne was administered. On the following day the pain was intensified, and it was necessary to administer morphine hypodermatically. On this day vomiting set in. On the 10th the symptoms were aggravated, the pain being localized in the right side. He was unable to retain either food or medicine administered by the mouth, and under the influence of a mercurial cathartic the bowels moved loosely several times. One movement in the afternoon, which contained solid fecal matter, relieved the patient considerably. At 1 in the afternoon the temperature was 102.5°, the pulse 102. When seen by me at 3 o'clock the temperature was 101°, pulse 110, respiration rapid and shallow. Both limbs were extended, and the patient moved about in bed with great pain. The entire iliac region was exceedingly sensitive to the touch, and the abdomen was slightly distended. Along the outer iliac fossa dulness existed for an area one inch in breadth. No tumor could be felt. The most tender point was one and one-half inches from the anterior superior process, on a line to the umbilicus. The patient felt somewhat improved, but the persistence of the local signs led me to advise celiotomy. Assisted by Drs. Didama and Higgins, of Cortland, after a hasty preparation of the patient, I made an incision, four inches in length, along the linea semilunaris. Upon incising the peritoneum, a stream of thin pus appeared. The appendix did not readily come into sight, but was discovered by my finger, external to and behind the cecum, extending upward, and adherent throughout its entire length. It was greatly thickened, infiltrated, darkly discolored, purple at its terminal extremity, and for a distance of one and one-half inches gangrenous near its attachment to the cecum. With some difficulty it was detached, and dissected well out to the cecum. The parts were sponged out with an antiseptic solution, the intestines protected with sponges, the appendix drawn up, ligated with silk at its base, and after tying its mesentery, removed. It was found to be six inches in length, distended with a quantity of thin pus, and contained no less than one dozen firm concretions of fecal character. The cut surface was cauterized with carbolic acid, the cavity was thoroughly mopped with a sublimate solution 1 to 1000, a drainage tube introduced, surrounded with a packing of iodoform-gauze, and the wound partially closed at its upper extremity. He rallied promptly from the operation, and two hours later the temperature was 98.5°, and the pulse 78. He slept fairly well during the night, and a change of dressings was made early the next morning. The patient still remained free from fever, and though suffering at the time of dressing, was otherwise free from pain. Word was received on the 13th of the patient's continued improvement, and the statement made that apparently nothing could interfere with his recovery. Shortly before 10 o'clock on the evening of the 15th, I received a message calling me immediately to Cortland. On that evening the patient had suddenly developed a rise in temperature, and great pain in the iliac fossa recurred. The bowels had moved daily, and there had been substantially no discharge from the wound. Anesthetizing the patient, I made an examination of the wound, and found some adhesions at the surface. Beneath the superficial adhesions there was a small quantity of pus, and on displacing the head of the colon, a stream of liquid feces appeared. Cleansing the wound as well as possible, an examination showed a perforation into the cecum, close to the appendicular attachment. Its edges were promptly denuded, inverted, and the wound closed with a Lembert suture.

The patient rallied nicely from this operation, but gradually sank from the development of a septic peritonitis, and died on the 20th of February.

The very promising course of this case in the early days following the operation had led us all to look forward, with apparently good reason, to a happy termination; but despite the irrigation of the wound with antiseptic solutions, and the subsequent careful packing of iodoform-gauze by Dr. Didama, the septic inflammation led to the perforation of the cecum.

CASE V.—September 24, 1892, I was called by Dr. C. S. Roberts to see J. M., aged twenty-one years, a butcher, unmarried, strong and robust, for the purpose of relieving what was supposed to be strangulated hernia. The patient was said to have had a right indirect inguinal hernia, which, when protruded, would return by lying down and keeping quiet for a short time. On the evening of the 22d he lifted a heavy quarter of beef, and was speedily seized with pain in the abdomen. During the night the pains assumed great severity, and were restricted to the region of the umbilicus. On the morning of the 27th he was given two large doses of salts. His bowels had moved on the previous day, but did not respond to the salines. The pains increased in severity, and Dr. Roberts, being called, administered an opiate, without relief. A soft elastic tumor existed in the upper portion of the right side of the scrotum. Taxis was applied, and also heat, but ineffectually. The patient was put upon his back, with thighs elevated, and resting upon a chair. In this position I found him at 4 P.M. on the 24th of September.

Examination of the tumor revealed an elastic swelling the size of a small hen's egg. The spermatic cord could be felt above and below. The abdomen was not distended, but was exceedingly rigid. The tongue had a dry, brown central streak. The pulse was 80, the temperature 100.5°. Upon pressure the entire abdomen was tender, but the pain was particularly upon the right side, and tenderness to digital pressure most marked at the McBurney point. The opinion was expressed that whatever the swelling in the scrotum might be, it had nothing to do with the abdominal trouble, which was believed to be the beginning of general peritonitis, dependent upon appendicitis. Celiotomy was advised, and, assisted by Drs. Roberts and H. D. Didama, was undertaken in the usual way. The incision was made along the outer border of the rectus abdominis muscle. After controlling the hemorrhage, which was slight, the peritoneum was opened. No pus was found. The appendix was concealed in a mass of adhesions. From these it was carefully separated, and was found to be one and one-half inches in length, thickened, almost purple in color, its surface in a condition of gangrenous inflammation. Near its base it was constricted and bent upon itself. It was ligated at its base, severed, and its cut end cauterized with carbolic acid. Every part was fully washed, and as there had been no pus present the wound was carefully closed by suture. It was now thought advisable to examine the scrotal swelling. An incision over it soon exposed an encysted hydrocele of the cord. This was split open, stitched to the surrounding skin, and packed with iodoform-gauze.

In the evening the urine, which had been retained for twenty-four hours, was drawn with a catheter. He passed a very restless night, but suffered more from the cystic than the abdominal operation. On the following day the temperature was 101.5°, but the tongue was less dry and the abdomen was less tender. There was no vomiting, and the bowels remained constipated. By the 28th of September all evidences of peritoneal inflammation had disappeared, and from this time the patient made an absolutely uninterrupted recovery.

In this case the timely removal of an appendix, beginning to be gangrenous, arrested peritoneal inflammation, and resulted in a very happy recovery. I believe a delay of twenty-four hours would have placed the patient beyond operative relief.

CASE VI.—C. W., aged forty, married, was seen September 9, 1891. He had usually enjoyed good health, but early in May last, while at Baldwinsville, he was seized with pain in the right side of the abdomen, with nausea, fever, and constipation, and was confined to his bed for one week. During the latter part of July a similar attack confined him to his bed for a few days. Two days previously the third recurrence manifested itself. During the months that had intervened there had been more or less constantly present a tender spot on the right side of the abdomen, which frequently interfered with locomotion. An examination showed a very slight tumor. Tenderness to finger-pressure was marked at the McBurney point. There was persistent nausea, but no vomiting. During the following week the patient was kept abed, although the acute manifestations disappeared about the 14th of the month. All that remained was a slight dulness along the outer border of the iliac fossa, and a little induration just above the level of the anterior superior spinous process. The patient, who had become greatly depressed because of the three recurrences of the inflammation of the vermiform appendix in the course of four months, very readily consented to the suggestion that the appendix be removed. On the 20th of September, 1891, he was removed to St. Joseph's Hospital, Syracuse, and on the following day, assisted by some of the gentlemen of the hospital staff, after the usual preparations, I made an incision into the abdominal cavity, as heretofore described, and after a little difficulty discovered the appendix adherent on all sides to the outer and posterior portion of the cecum. It was an inch and three quarters in length, densely infiltrated, and constricted at its base. Protecting the peritoneal cavity with sponges, it was removed by the knife, and its base cauterized with the Paquelin cautery. The abdominal wound was closed. There was nothing to mar the patient's recovery, which proceeded in every way satisfactorily. In the fourteen months which have elapsed since the operation, the patient has not had the slightest suggestion of a return of the previous symptoms, and has improved so much in his general condition that, to use his own words, "he feels quite like a new being."

The cases presented form an excellent text for the discussion of the surgical treatment of appendicitis, inasmuch as they present the various surgical aspects of the disease. But as I have already occupied so much time, I prefer to briefly summarize

the propositions I have to offer, and put them in the form of a series of conclusions, based not only upon my own cases, but upon the accumulated experience now at the disposal of the profession.

CONCLUSIONS.—1. As the appendix, and not the cecum, is the primary seat of disease, these forms of inflammation should be known as appendicitis. The terms typhlitis, perityphlitis, and paratyphlitis are not only confusing, but incorrect.

2. It is most important to determine whether the inflammation is non-suppurative or suppurative. If suppurative, it is equally vital for proper treatment to establish whether the diseased appendix and the purulent collections are to be hemmed in by protective adhesions, or to remain in direct communication with the general peritoneal cavity.

3. With symptoms of moderate severity, and no tendency of the inflammation to increase in extent or severity, but rather to decrease after thirty-six hours, it is safe to treat the case medicinally.

4. The exhibition of salines or other cathartics, in the early stage of appendicitis, is not only inadvisable, but likely to interfere with the development of protective adhesions, and may even be responsible for perforation. Exploration with the needle to determine the presence of pus is useless, and may be dangerous.

5. The violence of symptoms, and their continuance and progression, indicate the presence of existing suppuration, and render operative interference justifiable. The earliest manifestations of a developing general peritonitis make immediate operation absolutely imperative.

6. Each case is to be considered in the light of the individual symptoms it presents. The absence of fever should not lull the medical attendant into a belief of security. The proper moment for operative intervention in a given case cannot be established by the period of time elapsing in its development. Timely operation implies its performance before the appearance of septic peritonitis or other serious complications.

7. When the inflammatory process is of moderate severity, and evidence of tumor-formation is present, operation can be delayed until the fifth, or even as late as the twelfth day. The incision then to be made is to begin parallel with Poupart's ligament, an inch above its center, and curves upward along the outer border of the iliac fossa, and is thus to be entirely extra-peritoneal.

8. Acute cases, manifesting signs of perforation or gangrene, with no evidence of protective adhesions, demand immediate operation, the incision to be carried along the outer border of the rectus abdominis muscle, and directly into the free peritoneal cavity.

9. Advanced cases of suppuration, in which the abscess is post-cecal, can be opened by rectal incision.

10. Patients in whom attacks of appendicitis persist in recurring, especially when localized tenderness continues, should submit to the removal of the appendix during an intermission.

DURATION OF LIFE OF THE NERVOUS AMERICAN.

BY JULIUS POHLMAN, M. D.,
PROFESSOR OF PHYSIOLOGY, MEDICAL DEPARTMENT, UNIVERSITY OF BUFFALO, N. Y.

EACH nation seems to delight in emphasizing some one of its native peculiarities. We speak of the pugnacious Irishmen, the mercurial Frenchman, the patient German, the singing Italian, etc., and representatives of all these different people, placed upon an immensely rich but undeveloped continent of vast dimensions, have in their mixture produced the rushing American. And as we have learned that rapidity of action means rapidity of thought, and that this again means a corresponding expenditure of nervous energy, and as we have seen many strong men break down in the prime of life from overwork, we have, by common consent, looked upon the nervous American as the type of the citizen of our great republic to-day.

True, everybody deplores the fact, but confesses that it can't be helped, and finds consolation in the old saying that it is better to wear out than to rust!

Even such man as Prof. Thomas A. Emmet[1] tells us that—

> "Rest and recreation in the European sense are unknown to the mass of our population. We develop early and live a life crossed by more than our share of dyspepsia, neuralgia, and other nervous disorders. . . . . Our field of education is as extensive as, if not more so, than that of our neighbors, but it is more superficial; . . . the same mental application on which a German in his own land would thrive will in this country impair the physical condition or result in some serious nervous disorders."

And then we read every once in a while of some well-known, successful business or professional man who had to be sent to the insane asylum, and writers and orators find a convenient chance for the flow of eloquent and soul-stirring language to show how the present fearful rate of speed at which everything is done here in the struggle for existence begets this increasing nervousness, with its necessary reaction upon the body, and how the constant hurrying and driving in our daily work mean a corresponding shortening of life, or, if not death, then some form of insanity as "again demonstrated in the case of our dearly beloved fellow-citizen," etc.

And we read such statements and are convinced! We calmly accept the questionable dis-

[1] Principles and Practice of Gynecology, p. 18.

tinction as a fact. We know it is so! We know that Americans wear out faster and die earlier than the more phlegmatic Europeans, because we do everything under a higher pressure and at a higher speed. It makes us feel so delightfully miserable, so wretchedly proud to know that Americans are such a nervous lot and such a rapid-living nation! It is such a convenient excuse for so many of our individual shortcomings!

If it were merely a matter of terms, tickling our national vanity, we might pass it over with a smile, but side by side with the idea of "nervousness" rides the grim specter of shortened life, of premature but preventable death striking terror to the hearts of thousands, who watch with anxiety the struggles and efforts of their beloved ones—men, women, children, business or professional men—all are interested in this question more or less, and it well behooves us to ask: Is this so-often-quoted "fearful nervousness" and "early death" a fact, or merely an assertion? What proofs have we for it?

It seems very plausible indeed, and apparently correct physiologic reasoning to say that the individual's longevity is in inverse proportion to his daily hurry, all other things being equal. But until not many years ago the equally misleading but equally plausible statement was accepted, that the human race was growing smaller with the advance of civilization. It seemed so self-evident, indeed, that in the past, when men had nothing to do but to develop their muscle, when very little or no energy was used in educational problems, the body would be larger than at present, when the cultivation of the mind absorbs so large a share of our strength, and when so little attention is given to physical development! Everybody believed it then, large numbers of people believe it to-day, and yet scientific investigations have conclusively demonstrated the fallacy of that assumption.

First of all, the assumption that increased activity and greater hurry mean more rapid wearing away of the body ignores the fact that the human body is a wonderful piece of machinery which not only renews itself constantly, but whose strength and power of endurance and capacity for more work increase with increased use up to the point at which use becomes abuse. At what time and under what pressure this danger-line is reached depends upon the individual, and need not be discussed here, but under all conditions the physiologic law holds good which says that the strength of the organ is determined by its use, whether applied to the brain or the foot, to intellectual work or to physical labor.

To prove that Americans live as long as other nations is not an easy task; general statistics may well be excluded here when we remember the ease with which the same figures can be made to prove opposite problems. The only statistics that could be considered fairly reliable here are perhaps those of life insurance companies doing business in America and Europe; and a comparison of premiums charged under similar conditions on both sides of the Atlantic will furnish us with at least a few useful data. If the European's lease of life is longer than that of the American, then the insurance company will insure him at a smaller premium than his American brother, and if the latter wears out faster, it would be a suicidal policy for any life insurance company to insure him at the same premium at which the risks are taken in Europe on Europeans.

The executive officers of the Equitable, the Mutual, the New York, and the Germania life insurance companies have kindly supplied me with the following information:

The *Equitable* writes as follows: Our rates in Europe are the same as in the United States. In some parts of Europe we charge more, but it is not so much on account of the fear of extra mortality as on account of the onerous conditions under which we are compelled to do business.

The *Mutual:* The experiences of British and German companies show that the lives which were insured in those companies were not on the average as good as the lives insured in American companies. The experience of this company is thus far quite as favorable on its European business as on its business in this country.

The *New York:* The rates charged in most parts of Europe and England are the same as those charged under similar conditions in this country.

The *Germania:* Our premiums are higher in Europe than in America.

These four companies insure together about 550,000 lives in America and about 65,000 in Europe; a limited number, true, but they all tell us unanimously that from the material standpoint of dollars and cents the life of the American is at least as good, if not better, than that of the European, all other conditions being the same. And if we remember that probably the majority of the holders of policies of life insurances in this country is made up from those very same active, pushing and rushing men, a class among which "death from overwork" would naturally occur most frequently, then the figures mentioned acquire additional force. Based upon that most sensitive spot of the human anatomy, the pocketbook, they permit of no sentiment, no public opinion, no emotional eloquence, but calmly proclaim in cold hard figures that the chances for a long life are just as good in America as they are in Europe.

Mr. Herbert Cillis, the actuary of the Germania Life Insurance Company, has kindly furnished me with a compilation drawn from every available source regarding the estimated duration of life at

different years of age, both in America and Europe, of which the following is a short abstract:

Age.	Estimated duration of life in America.	England.	Germany.
11	48.72	50.29	.....
12	48.08	49.54	.....
13	47.45	48.73	.....
14	46.80	47.89	.....
15	46.16	47.03	.....
16	45.50	46.16	.....
17	44.85	45 29	.....
18	44.19	44.44	.....
19	43.53	43.61	.....
20	42.87	42.82	.....
21	42.20	42.06	40.45
25	39.49	39.15	37 42
30	36.03	35.42	33.62
35	32.50	31.75	29.89
40	28.90	28.12	26.26
45	25.27	24.51	22.77
50	21.63	20.99	19.39
55	18.09	17.62	16.20
60	14.10	13.83	12.76
65	11.10	11.01	10.21
70	8.48	8.50	7.96
75	6.27	6.38	6.03
80	4.39	4.72	4 42
85	2.77	3.51	3.30
90	1.42	2.36	.....
95	0.50	0.93	.....

These figures certainly show that, as far as life insurance statistics go, the chances of the American, from early manhood to a good old age are, all through, a little better than those of his English brother, and a good deal better than those of the Germans, in spite of all statements about "climate" and "nervousness." If, between the ages of twenty and seventy, life insurance companies, based upon dollars and cents, allow the Americans a longer life right through, then it seems that we are justified in concluding that we have simply obeyed the old physiologic law and adapted the machinery of our body to a high speed without hurting ourselves, while our European brethren dodge along at a low pressure without, on that account, prolonging their life.

But the foregoing tables teach us something more. At eleven years of age the chances of the American boy are *1.57 years less* than those of his English brother. It is a pity that the statistics do not deal with younger children, but we may well pause to grasp the full meaning of this statement, for it involves a heavy accusation against American motherhood, and unfortunately against the mothers of the better classes, because the poor people rarely, if ever, insure in the regular companies. We may well raise the question: Is the American woman a less capable mother than her English sister? Has she, in her striving for fashionable fads and foibles, for literary crazes, women's advance clubs and political organizations, ignored or neglected or forgotten the first and most important function of a woman, the duties of motherhood? Is it carelessness or over-care, indolence or ignorance, that gives to the English boy at the age of eleven 1½ years more of life than to the American boy (for these tables are all based on figures for the masculine gender). The latter improves from year to year, as he grows away from mother's care, or carelessness, as the case may be, so that at the age of twenty his chances are as good as those of his transatlantic brother, and the question that presents itself very forcibly is: What is the cause of this high rate of mortality of our children? Don't let us crawl behind that well-worn excuse and say "It is the climate." And if the climate *has some* influence, let us try and find out how much, and at the same time investigate the other factors contributing toward that end.

This paper is merely intended as a preliminary study of a subject of general interest: may it call forth other additional investigations and help, not only in breaking down the dangerous popular fallacy that the rushing American is doomed to an early grave, but also aid in discovering ways and means by which the present abnormal death-rate among American children can be reduced to more normal figures.

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CLINICAL LESSONS.

CHOREOID MOVEMENTS IN AN ADULT MALE, PROBABLY OF HYSTERICAL ORIGIN; RELATIONSHIP TO HABIT-CHOREA.

Clinical Lessons:
Infirmary for Nervous Diseases of the Orthopædic Hospital.

BY S. WEIR MITCHELL, M.D.,
OF PHILADELPHIA.

[Reported by CHARLES W. BURR, M.D.]

D. F., a white male, thirty-seven years of age, applied for treatment December, 1891, on account of spasmodic to-and-fro movements of the head. The family history is negative, and the previous health has been generally good. He had typhoid fever when ten years old, and again when eighteen. He has been married fourteen years, and had had three children, of whom one died of dysentery. Syphilis is denied and there was no evidence of it. His habits were good, and he did not use tobacco excessively.

About three months before coming to the Infirmary he had been much worried about moving his place of business to some other part of the country. He could reach no decision, grew very nervous, slept very little, became dyspeptic and very melancholy. After about two weeks spasmodic movements of the head suddenly appeared.

Present state. Every few moments the head is forcibly jerked backward by the trapezii muscles. When lying in bed the spasm is much less frequent. It is

increased in frequency during examination, and for a time ceases entirely if the attention be strongly directed to any object. For example, while looking at a thermometer bulb, the patient was quiet for five minutes. During sleep there are no movements whatever. While in the hospital he developed general choreiform movements.

He is fairly well nourished. His expression is markedly melancholic. Intelligence is good, but he is profoundly apathetic. He declares that he sleeps very little. His appetite is poor and he suffers much from gaseous eructations after eating. The thoracic and abdominal organs are normal, the station good, and the gait normal. The urine is normal. Prof. de Schweinitz examined his eyes and reported slight hypermetropic astigmatism with insufficiency of the interni.

The patient was put at absolute rest in bed, given gelsemium, bromid, and chloral, and given, later, hypodermatic injections of distilled water. These had a very happy effect upon his insomnia, and, indeed, caused drowsiness the following day. After about eight weeks' stay in the hospital he was discharged greatly improved, but still having occasional clonic spasms of the trapezii. There were no sensory changes. The man was emotional and given to tears. Soon after admission he began to have at times, after exercise, great emotion, or any excitement, spasmodic jerks of one limb, or of the trunk. Thus the arm would be extended forcibly, and again and again for a half-hour, or the leg, or both legs; or he flopped fish-like until wearied. The head-movements were likely to cease when any other form of spasm was present, but were, on the whole, the most common. They were generally either to-and-fro motions or backward jerks, seemingly due more to the trapezii than to the other posterior neck-muscles. Over all of these movements he had temporary volitional control. When he thus restrained them he said that the sense of weariness became by degrees unendurable and he had to let go.

REMARKS.—The resemblance, clinically, to the cases of habit-chorea or habit-spasm, as Gowers likes to describe the disorder I first called attention to some years ago, is very striking. The lad I shall show you to-day is another illustration of a genus of cases which has several related species, and all that variety which individuality occasions. As in this case and in that of the boy, hysteria is the potent agent in their production.

Acute habit-chorea, resembling so-called electric chorea.—B. F., a male, ten years of age, applied for treatment in December, 1892, complaining of involuntary movements of the head. His father had had fits in childhood, and one cousin has had habit-chorea. One brother died in convulsions when seven months old. The patient had diphtheria when two years old, scarlet fever three years ago, and measles last year. He has always been nervous. The mother states that he is the smallest boy in his class and has always stood at the head in his studies. She thinks that over-study in preparing for examinations may have been the cause of his illness. The present trouble began about two weeks before application for treatment.

There is constant wagging of the head from side to side, shrugging of the shoulders, and winking. The patient is a bright, well-made lad, with excellent muscular development. There is no ataxia of motion or station. The knee-jerks are capricious. Clonus is absent. The cremasteric reflex is present. The abdominal reflexes are absent. The elbow-jerk is present. The muscle-jerks in the arms are very marked. There are no palsies. Speech and sensation are normal. His physical health is good, and examination reveals no disease of the abdominal or thoracic organs. The foreskin is very long, but there are no adhesions. There is no genital irritation, nor any bad habits.

Prof. de Schweinitz examined his eyes and reports: "R. E., V. = 15/xxx. Round disc, temporal edges clear; nasal and upper and lower margins hidden by grayish infiltration; much white tissue around central vessels. Veins full, arteries normal. L. E., V. = 15/xv (partly). Similar condition of disc, but blurring of disc less marked. Slight concomitant convergent squint. Eyes wander in under cover. Hypermetropia = 1.5 D. Slight astigmatism. Diagnosis: hemi-neuritis with hypermetropic astigmatism, and slight convergent squint."

The case was diagnosticated habit-chorea, treatment was given and the boy told to return in a week. Two weeks later he came back showing marked changes in the symptoms. Every few minutes the head is jerked violently and suddenly to the right or left. Previously the motions had been slow and gentle. An arm is very forcibly extended once, the legs are flexed and extended once. Similar movements elevate or depress the shoulders. These movements are independent of each other. That is to say, at any given moment any part may be involved, though oftentimes the legs move synchronously. The movements are shock-like, sudden, rapid and violent. They appear almost as if willed. During sleep they cease entirely. Emotional excitement increases them markedly. Voluntary motion of arm or leg decreases them for the time being in the member used, but has no effect upon the rest of the body. While lying down they are less severe than when up. There are no sensory failures. He was given Fowler's solution in increasing doses and ordered to be kept at rest.

After a few days the movements suddenly ceased, but were immediately followed by attacks of violent, barking, spasmodic cough, so severe as to alarm his parents. When next seen at the Infirmary he would every few minutes make a short, quick, explosive, grunting noise. When told to breathe deeply the cough stopped entirely. Expectant attention produced by having him fix his eyes upon a bright object had the same effect. Slight general choreiform movements were also present. Complete cure followed his admission to the Infirmary and subjection to the hospital discipline in bed for a few weeks.

REMARKS.—This case, as you see, looks like what I will call acute habit-chorea. The same power of control exists for a time as in Case I. The uneasiness under self-control is present. The abrupt cessation of other movements when the barking or grunting comes on is sometimes seen in habit-chorea, but in that disorder there are usually frequent repetitions, never violent, of the part disturbed. This lasts for days, and on ceasing is replaced by like movements elsewhere. These children may or may not be hysterical, but the hysteria of childhood often fails to give you a complete picture.

The grunting is not like the cough of hysterical women, and is probably only an incident of one of the forms of semi-spasmodic movement. At times it is due to sudden abdominal muscular contractions. Clinically and practically all this is interesting. Of this you may be sure, that when adults are afflicted with these forms of temporarily controllable semi-spasmodic motions, you will find them hard to get well. All the emotionalness of such temperaments as incline to motor disorder is increased by their presence. These people get self-watchful, depressed, and will-less. Children are easier to cure, no matter how grave the malady, or how distinct the hysteria. Always with them the changefulness of development assists, if you know how to use your opportunities. Isolate them, if possible. Insist on mild diet —as of milk or vegetables, or these combined. Keep them at rest, and by-and-by offer little bribes if they will allow you for definite and increasing periods to restrain the movements. The slight cases of habit-spasm may be enduring, and the more severe cases get well, like this good little fellow. There are cases which do not, and which develop into the disastrous states of mind and body I have delineated in my *Lectures on Nervous Diseases*. These failures are commonly due to the folly of parents. There is no worse enemy of a nervous child than a nervous mother. The peculiar violence and look of spontaneous action in the lad's spasmodic movements recalled to my mind a man who, many years ago, was my patient. He was subject—and for periods of a week or two—to a disorder of which, being a quiet bank-clerk, he was much ashamed. After a few days of general uneasiness, which made him restless and inclined to excessive exertion, he began to have spasmodic actions—like this boy's—a sense of profound unease for a few minutes, ended in a single motion of abrupt violence. A leg was thrown upward or back; an arm, with the fist clenched, struck out once with a look of purpose about the act which was contradicted by the fact that he had over and over hurt his hand by driving it against some obstacle. Once or twice he had hurt others. At times he would warn me or another of the coming risk. No cause for this peculiar state was ever found; nor do I know what became of the man.

Case of extreme multiple myoclonus of hysterical character in a male.—Some of you may recall the interesting case of last year, in a Hebrew in middle life who presented a striking illustration of multiple myoclonus. I reported it with others as curious spastic cases to the Neurological Association. I now recall it to state that the man has become well and walks about like others. I saw once, some years ago, a similar case, and they are very rare, and it too was hysterical and in a Hebrew.

And now I am able to read you the notes of another case of multiple myoclonus, clearly hysterical, and in a gentleman whom I saw lately in consultation in a distant State. As I have so lately discussed the possibility of these spasms originating in the cord, I shall not need to repeat my remarks.

Family history. C. B., aged thirty-five years, has no neurotic history or history of mental disease. Some of the remote ancestors were rather eccentric or peculiar in certain directions. His paternal uncle died, aged forty-five, of acute cerebral disease, said to have been encephalitis. One cousin, a son of this uncle, has had incoördination of all the extremities, choreic movements of the face accompanying voluntary movements only, and indistinctness of speech, which were first noted in infancy, but were not thought to have been congenital.

The mother's labor was normal, no instruments having been used. The child was somewhat backward in development; the anterior fontanel seems to have remained open unusually long. There was decided indistinctness and difficulty in speech, which only disappeared after some years. At school the boy was rather slow and seemed disinclined to learn. He was always a little peculiar; he had very strong opinions on various subjects which could not be readily influenced, and were different from those natural to his companions. For some years before his present attack (six years ago) he had been considered a little peculiar by neighbors. When about seven years old he was thrown out of a light wagon and the wheel passed over his head. No evidence of fracture of the skull was detected and he seemed well in a few days. When fifteen or sixteen years old, and while studying rather hard at school, he began to have severe frontal, bilateral headaches, which at first came after study only, but gradually persisted, although the study was given up, and after a time came in the mornings without apparent cause, lasting some hours, apparently often connected with the condition of the weather, being worse when there was a cold, piercing, or bracing wind. From this time the headaches have persisted, at first coming principally in the spring, while he was free from them through the rest of the year; later, occurring at any season, and gradually growing more frequent and more troublesome, so that, finally, he gave up his home in the city and lived entirely in the country. Study was found to be impossible. Change of climate made his sufferings worse. The patient led an out-of-door life, superintending and working on his farm until his present trouble commenced. He was an unusually large, strong, and muscularly well-developed man.

The present trouble began six years ago, some time after a moral shock, in which the emotions were much involved. He was attacked with unusually severe headaches, general lassitude, and inability to work, so that he left his farm for a time and came to live with his parents, who had a large estate in the neighborhood. While with them, he was one day, while driving, attacked, without apparent cause, with a fit of coughing, which lasted some minutes and was of a convulsive character, and so violent as to be alarming. After this, similar attacks of coughing came on almost daily, and seemed to be aggravated or provoked by driving. A few days later he began to have attacks of violent involuntary movements (clonic spasms), affecting the extremities; at first often unilateral, sometimes on one side and sometimes on the other. The lower extremities were more affected, on the whole, than the upper. The spasms, at first, occurred only on rising in the morning. After a few weeks, the attacks of coughing were largely replaced by attacks of hiccoughs, and it was found that the headaches, the cough, the hiccoughs, and the motor spasms were more or less interchangeable. Since this time, the general features of the affection have remained unaltered. The motor spasms have gradually become more frequent, for some years occurring daily at stated hours (periodic), with frequent intervening attacks, and

now occurring several times a day, and every day. The motor attacks consist of very violent, more or less regular movements of the extremities, especially the lower, when violent stamping or up-and-down movements follow each other with great rapidity; in the upper extremities there are regular coarse movements of the entire extremities. These attacks come on, especially at the regular times, without apparent cause, but are also produced at any time by a sudden, unexpected touch, or by any touch with which emotion is connected. They are also produced by motion (both sensori-motor and motor-motor spasms).

The paroxysms of cough disappeared after some months to a considerable extent, while the hiccoughs lasted only a few weeks, the place of both being apparently taken by the larger spasms of the limbs. During the last three years there have been many attacks of retching and vomiting (or regurgitation), without nausea, and, for the last two years, attacks of violent and forcible shouting; all of these are interchangeable with the others.

For a year past some loss of strength has been noticed and an increase in the ease with which the spasms are caused, especially by walking, so that they now largely preclude any attempt at exercise, as he states that he is liable to have his legs drawn from under him violently and suddenly, so that he falls to the ground. If walking be persisted in, in spite of the spasms, the headache becomes unbearable. Of late, the trunk has also been invaded by the spasms, the body being frequently bent to one side, usually the left; and clonic spasms in the trunk-muscles sometimes last for hours and even days (once apparently without remission for four days, but the patient was not seen while asleep), causing great soreness and tenderness in these muscles. There is now much dizziness, which began first six months ago, and now causes an additional difficulty in walking.

He has taken food irregularly for years; of late, not more than one meal of solids a day, and that usually at 11 P.M., and the rest of the time, weak coffee or milk, when wished for. The bowels are regular; the urine negative. The face is now pale, but becomes turgid and congested during attacks, partly from the violence of the motion, partly from or with the headache, which is likely to accompany them. The intellect is unimpaired (broadly speaking). Sleep has been good.

This gentleman, unlike our former case, is in easy circumstances. It were better he were not, as he is able to control his own surroundings and to isolate himself as he pleases. The limitations to which the position, age, and circumstances of the case subject our therapeutics must be clear to you. When I first examined this most expressively hysterical case I found my patient up, and after a partial examination, with increasing signs of fear and nervousness, he went to bed. There I completed a long, but, of necessity, imperfect study. He was a rather well-built, well-colored man, with no organic troubles. As I went on to make the ordinary search as to sensation, reflexes, etc., all being normal, he became all the time more and more convulsed. If I touched a leg, it passed at once into violent convulsion, and this at times involved all four limbs, and was so terrible that I thought the bed would be broken. When he tried to walk, and always then if emotionally disturbed, he would begin to stamp in a strange way and with swiftly increasing force, and this spastic state, reaching the trunk, seemed then to draw him down, so that he fell or contrived to get back to the bed. I was obliged at last to cut short my examination, but not before, with the aid of his physician, I was able to reach very distinct conclusions.

Cases of violent hysteria in the male are not common, at least in America. Only once in my life have I seen a male exhibit all the acts in the long drama of hysteria precisely as we so often see them in the female. I now add the opinion given in the case of Mr. C. B. A careful consideration of the symptoms brings me to three conclusions:

(1) That the form of the convulsive attacks brings this disorder closer to the clinical delineations of myoclonus than to those of any other group of symptoms.

He is liable to have violent stamping, or worse, from standing, *i. e.*, sole-pressure causes it. Also, when cognizant of it, a mere touch anywhere brings on clonic spasms of the legs if these be touched, or of the arms under like circumstances. Voluntary motion may, as in other cases, give rise to like spasms, *i. e.*, the spasms as to cause may be sensori-motor or moto-motor.

(2) Evidently attention increases the severity of sensori-motor manifestations.

(3) For various reasons, this myoclonus seems to me hysterical. The transfers, the interchangeableness of spasms, headache, regurgitation, hiccough, and vocal symptoms, all point this way. So do the type of laryngeal phenomena, and the characteristic regurgitation without nausea; and that the first spasms followed a grave emotional disturbance, assists us to a like conclusion. The original injury may have been contributive, but there is not in the skull any very distinct local evidence of organic lesion.

If it all be at last hysteria, or, due to the injury but in its outcome hysteric, one might look to find sensory changes; but close examination of the skin is impossible, and without ether I could not see the eye-grounds, as I wished to do. It would be worth while once to do this under ether. Probably the spasms have their birth in the cord. They seem to me in quality and history functional, and I ought to add that, when off guard—a rare thing—the touch of my hand does not occasion spasm, nor does his own touch of himself, unless, one having asked if it be so capable, he with pre-attention touches himself.

Probably he is incurable, but this does not imply the certainty of his not losing the spasms—as may come about. If he were a lad, I would take him away, and with isolation, massage, and electricity treat him, and have hope. Now, I do not advise it. I should like to see hypnotism used. I would assuredly use for a year arsenic. I would not let him live wholly alone or unvisited by friends, as he would wish to be the case.

Hypodermatic use of arsenic is to be considered.

I have little doubt that the injury may have been the ultimate cause of headache, and that he has had more or less of chronic meningitis. If he could have a good study of the eyes by an expert, I should feel better satisfied, as the eyes may, with slight ocular defects, be competent to trouble a defective brain. Also, the color-fields might prove very interesting.

I gather enough in various ways to make me think

that Mr. C. B. was never a perfectly normal person in earlier youth. When, to a person of such neurotic type, come accident, emotions, etc., then the worst and the more unusual results are to be apprehended.

Yet a word before I close the lesson of the day. I have used the label hysteria again and again. It is, and as yet must be, a word of somewhat loose employment. I am not sure that it is just to apply it, because with spastic or other symptoms the patient is merely emotional, but certainly we, by common consent, do this, especially in the unusual forms of spasm and in cases in which clearly emotion, as in Case I of to-day, was the parent of the spasms, and by its added increase proportionally developed the number or violence of the movements in question. When we have areas of anesthesia we use the term in question with lessened doubt. If, too, without organic change we find these, and with them optical anesthesia for colors or especially reversals of the color fields, our doubts are further lessened. But after all it is the grouped conditions which fully justify such clinical labels. Dr. J. K. Mitchell and Prof. de Schweinitz have shown how much our American experience as to the eye-symptoms of hysteria may vary from those of the French observers.

A greater surprise in this direction was given us lately by the case of a double fracture of the spine in a most wholesome-minded girl, free from the least trace of hysteria. In her, to our amazement, there was complete reversal of the color fields. The case will be more fully related elsewhere.

ORIGINAL LECTURE.

TRAUMATIC MYELITIS.

A Clinical Lecture[1]
delivered at the Arapahoe County Hospital, October 1, 1892.

BY J. T. ESKRIDGE, M.D.,
PROFESSOR OF NERVOUS AND MENTAL DISEASES IN THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF COLORADO; NEUROLOGIST TO THE ARAPAHOE COUNTY, TO THE ST. LUKE'S AND TO THE DEACONESS HOME HOSPITALS.

GENTLEMEN: I wish to call your attention to-day to a case of traumatic myelitis. The history is as follows: G. S., nineteen years of age, of New York, a widow, by occupation a housemaid, came to Colorado in 1890. The family history is unimportant. She seems to have enjoyed excellent health until the 23d day of August, 1892, when she was shot in the back on a level with the ninth dorsal vertebra. She immediately fell, unable to move her legs. She was admitted to the hospital two days later, and at the examination, August 25th, her condition was noted as follows: Her mind is clear and she is entirely free from pain. The leg muscles are completely flaccid, and foot-drop exists to an extreme degree, but the foot can be passively brought to a right angle with the leg, and can be dorsally flexed without any resistance. There is a slight plantar reflex, and this is equal on both sides. Ankle-clonus is absent, also the knee-jerks, both direct and reinforced. Paralysis of the sphincters of the bowel and bladder is complete. All the superficial reflexes, with the exception of the plantar, up to the eighth rib, are completely abolished. Tactile sense is completely lost from the eighth intercostal space downward on both sides of the body. Pain, pressure, muscular, localization, temperature, and posture senses are abolished over the anesthetic area. Normal sensation begins at the eighth intercostal space, without any area of hyperesthesia, and is normal from this space upward. There is no disturbonce of the heart's action or respiratory functions. The external bullet-wound is small, and is three-quarters of an inch to the left of the spine, opposite the ninth dorsal vertebra.

When the woman was brought into the hospital, two questions suggested themselves in regard to the treatment: Should we treat the case simply as one of traumatic myelitis, or should we recommend a surgical operation? Under the modern system of aseptic and antiseptic surgical procedures, an operation, *per se*, either on the brain or the cord, is not attended with much danger. The probability here of pressure on the cord, either by hemorrhage into the spinal canal, or by a spicule of bone which had been carried by the ball, or by the presence of the ball itself, made it almost obligatory to recommend a surgical operation, because so complete abolition of all functions of the cord suggests that we might have had some direct violence to the cord at the time of the shooting. The strongest reason for not operating was this same complete abolition of the functions of the cord below the level of the eighth intercostal space. It is now pretty generally conceded by neurologists that when the knee-jerks remain permanently abolished after an injury to the cord in the dorsal or cervical region, the cord has been completely destroyed at the point of lesion. Ordinarily under such circumstances, an operation for the relief of pressure on the cord (even if the cause of the pressure were found and removed) could be attended with no good results; because, in no instance, so far as we know, after complete division of the human spinal cord has occurred, has union of the divided ends of the cord taken place.

In dealing with such a case as the one under consideration, it must be borne in mind, however, that after all severe injuries to the cord, either in the cervical or dorsal region, even when complete continuity of the cord has not been destroyed, the reflexes, both deep and superficial, are abolished, and remain so for several hours or days, depending upon the severity of the shock to the central nervous system. In cases of incomplete division, when the reflexes return, the superficial reflexes reappear before the deep and become exaggerated in advance of them. At the time we were called upon to determine the advisability of an operation, only thirty-six hours had elapsed since the reception of the bullet-wound, and although the knee-jerks were still absent, there was a feeble plantar reflex in each foot. The position taken by the surgeon on duty, Dr. Boice, and the others of the surgical staff of the hospital, Drs. Rogers and Parkhill, as well as by myself, was that the case was too grave to permit of any delay, if an operation were to be performed at all; and as the plantar reflexes, though feeble, were present, we might have sufficient pressure on the cord to abolish its function almost completely for the time being, even if entire solution of continuity had not taken place.

An immediate operation, consisting of exposing the

[1] Stenographically reported by Miss Lottie M. Page.

spinal canal by removal of several laminæ of the vertebræ, was decided upon.

The next question to decide was the seat of the operation. The ball had pierced the skin opposite the body of the ninth dorsal vertebra, and, on probing, the direction of the bullet-wound seemed to be upward and slightly outward, so that from the position of the external wound we had no definite localizing symptoms of the exact seat of the lesion in the cord. For localizing purposes, however, we had two important symptoms: the upper limit of the area of anesthesia and the condition of the superficial reflexes. The cutaneous surface over which are found the abdominal reflexes (the lower elicited by smartly stroking the skin of the abdomen by means of a lead-pencil, the blunt points of the esthesiometer, or some such agent, just above Poupart's ligament on either side; and the upper, found in like manner in the epigastric region) is innervated by the spinal nerves that come from the cord between the sixth and eleventh dorsal segments. In the patient whose case is under consideration, the lower abdominal reflexes were absent, and the epigastric could be found only in the extreme upper epigastric region near the ensiform cartilage. From this condition of the superficial reflexes it seems to me that we were justified in locating the cord-lesion somewhere between the ninth and sixth dorsal segments. I have directed your attention particularly to the superficial reflexes in this case, not so much for their localizing value in such a case as this, in which the myelitic lesion is severe, and the upper limit of the area of anesthesia is definite and well outlined, as to call your attention to their value in slighter cord-lesions, in which you may have no sharp upper limit of the area of anesthesia. In the case of the patient before us, it was the upper and sharply-defined limit of the area of anesthesia by which the lesion in the cord was localized.

In the dorsal region the cutaneous nervous supply of the intercostal spaces corresponds in number with the number of the segment of the cord from which the nerve is given off, so that as we found complete abolition of all sensory phenomena in the ninth intercostal space, and a more or less complete preservation of the same in the eighth intercostal space, we could with some certainty locate the lesion in the ninth dorsal segment of the cord. As a general statement it may be said, that the dorsal spines are opposite segments of the cord number two or three below the number corresponding to a given spine. For example, the eighth dorsal spine is opposite the tenth, or a point between the tenth and eleventh, dorsal segments of the cord.

In the patient before us it was decided to expose the spinal canal by removal of the laminæ of the fifth, sixth, seventh, and eighth dorsal vertebræ, without separating the spines from their ligamentous attachments, thus following the operation devised and executed by Dr. Abbe, of New York. The operation was performed by Dr. Boice, assisted by Drs. Rogers and Parkhill.

On exposing the spinal canal the dura seemed to be normal in appearance, and pulsation in the cord was felt and seen. No cause of pressure, either from the presence of the ball, depressed bone, or effused blood, in the spinal canal, external to the dura, was found. The laminæ of the fourth dorsal vertebra were removed, and still no cause to account for the cord-lesion was apparent. As the dura was uninjured and the membranes of the cord did not contain an undue quantity of fluid, it was thought best not to expose the cord. At the operation neither the ball nor its tract was discovered.

The wound was dressed in the usual manner, and the patient placed in bed surrounded by moderately warm bottles, not sufficiently hot, however, to cause eschars over the anesthetic area. The wound healed without the formation of pus. The temperature rose considerably at first, but there was no great constitutional disturbance. The temperature on admission was 101.5°. The day after the operation it rose to 103.5°, but that night it dropped to 102°. The next day it rose to 103° and then dropped to 102°. This was on the third day after the operation. On the fourth day it dropped to 99°. Since then the temperature has been more or less vacillating, usually remaining about 1.5° above normal. On the 7th of September it rose to 104.4°, but at no other period has the temperature gone beyond 102.5°. The pulse and respiration have been good until recently. The patient's condition has not been made worse by the operation, although there have been no directly good results from it. The patient has eaten fairly well, but has been restless, and there have been evidences during the last three weeks that the myelitis has been ascending. On examination to-day the plantar reflex of each foot is found quite distinct, and a decided jerk of the muscles of the legs takes place when these reflexes are elicited. Occasionally a decided twitching of the muscles of the legs occurs spontaneously, but in the left leg to a less degree than in the right. The woman speaks also of feeling a tingling sensation in the legs from the knees down. The latter has been constant almost since the operation, while the twitching has only existed for about two weeks. I desire to call your attention to the flaccid condition of the muscles of the legs. The feet are plantar-flexed by their own weight until the insteps are on a line with the tibia. The muscles are considerably wasted. The left leg is considerably swollen, and the left foot to an enormous degree. The right foot and leg are only moderately swollen. We have complete paralysis of all muscles, including the sphincters of the bladder and bowel, up to the fifth or sixth intercostal space. With the exception of a slight plantar reflex, all the reflexes, both deep and superficial, are abolished from the sixth intercostal space downward. The epigastric reflex is now absent, although it was present immediately after the shooting. All sensory phenomena are abolished from the sixth intercostal space downward.

The trophic disturbances in our patient have become well marked. The most serious is the formation of a sacral bedsore, which extends over a considerable area, and has laid bare the muscles. Slough after slough has formed, and in spite of the best attention and most careful nursing the sore is constantly increasing in size and malignancy. Small sores have formed on the posterior surfaces of the heels; in fact, wherever pressure is exerted, as over the calves of the legs, the posterior surfaces of the thighs, and over each hip, it is only with great difficulty that sores have been prevented. Careful attention has been given to the bladder, but notwithstanding the vigilance

of the resident physician, Dr. Mavity, and of the nurse, a cystitis has resulted. So far, the kidneys do not seem to be affected. The swelling of the feet and legs is another evidence of the marked trophic disturbance. It is probable that some effusion has taken place into the ankle-joint and knee-joints.

[The patient was now removed from the clinic room.]

We will now consider the probable nature of the spinal-cord lesion from which our patient is suffering. You remember that at the operation, performed August 25, 1892, the spinal canal was exposed from the fourth to the eighth dorsal vertebra inclusive, by the removal of the laminæ, but that no direct injury to the cord was found from the presence of the bullet, or from spiculæ of bone, although the paralysis was sudden and complete, from the eighth dorsal segment of the cord downward, from the moment the fatal shot was fired.

In the absence of direct injury to the cord, the lesion must have been a vascular one, a result of a violent shock to the spine, probably caused by the ball striking against the body of one of the vertebræ. It must have been either a hemorrhage in the substance of the cord or in the membranes, or, both a cord and meningeal hemorrhage might have occurred at the same time.

In cases of spinal meningeal hemorrhage, the paralysis, sensory and motor, is never complete, and there is great pain in the back and down the limbs, with spasmodic contraction of those muscles supplied by the spinal nerves irritated by the presence of the effused blood. Our patient has suffered but little pain in the back, none in the limbs; there has been no muscular spasm, and paralysis was complete from the moment of the injury. We can, then, exclude simple spinal meningeal hemorrhage.

Was there a double lesion—a cord and a meningeal one? If a meningeal hemorrhage in such a case as this were to occur only below the point of the cord-lesion, no symptoms would be produced by it; but we can scarcely conceive of such a state of affairs, for the meningeal hemorrhage would probably be greatest at the point where the violence of the shock expended itself upon the cord and membranes. Under such circumstances the meningeal hemorrhage would extend upward and downward, both above and below the cord-lesion, and the hemorrhage in the membranes above the cord-lesion would give rise to the usual symptoms found to attend a simple spinal meningeal hemorrhage unattended by any direct cord-lesion. Further, we found at the operation, thirty-six hours after the shooting, no evidence of effused blood in the membranes.

It seems to me we are justified in concluding that at the time of the reception of the shock a hemorrhage occurred in the gray substance of the cord, sufficiently large to destroy completely the function, if not the substance, of the cord at the seat of the hemorrhage.

About two years ago a man was admitted into one of the nervous wards of this hospital, completely paralyzed, both for motion and all forms of sensation, from the first dorsal segment of the cord downward. He had been sitting on a fence, about four feet in height, when suddenly he lost his balance and fell backward, striking the ground with his spine in the cervico-dorsal region. Paralysis was immediate and complete. He died about one week later of ascending myelitis. At the autopsy the bones were found in a normal condition, but at the first dorsal segment the cord was semi-fluid and pulpy, and when the cord was cut at this point its substance ran out like pus, as when an abscess is opened. The broken-down cord-substance was discolored with partially coagulated blood. Effused blood was found in the central portion of the cord, just above and below the pulpy portion. About three years ago I saw, in consultation with Dr. Pfeiffer, in the Union Pacific Hospital, a case almost identical with the one just related. In both of these cases there was complete abolition of all the reflexes, deep and superficial, below the point of the cord-lesion. It is probable that at the autopsy of the patient whose case we have studied to-day (for death is sure to take place in a comparatively short time), we shall find the cord softened and pulpy at about the ninth dorsal segment, with a pus-like substance stained with blood, should death not be postponed until the coloring matter of the blood all disappears.

Cases like the one we have been studying to-day are properly termed hematomyelia. When the hemorrhage in the cord is large, it is almost always due to traumatism of some kind, and usually to direct violence to the spine.

The symptoms are those of acute and destructive myelitis, with these exceptions: they come on suddenly, and are unattended with any initial rise of temperature, but, on the contrary, the temperature is, as a rule, subnormal until the patient begins to react from the shock.

The symptoms of acute myelitis are motor, sensory, reflex, and trophic in character. They vary in intensity in proportion to the mildness or severity of the inflammation, and are modified by the segments of the cord involved in transverse myelitis, the most common form of the disease.

The symptoms of myelitis in a severe and destructive form have been too well demonstrated by the case which we have studied to-day to require any repetition of them.

I wish to call attention, at present, to the condition of the reflexes in myelitis. In all severe forms of myelitis that come on suddenly, and in all cases of hemorrhagic or central myelitis, there is an initial period of inhibitory abolition of all the reflexes below the seat of the cord-lesion. If the lesion has occurred in the lumbar region of the cord the reflexes in the legs remain absent until well on into convalescence, and the knee-jerks may never become normal, although recovery be almost complete. Even in the lighter forms of acute myelitis in the lumbar region of the cord, the reflexes (especially the knee-jerks) in the legs remain absent throughout the course of the disease. When the disease affects the cervical or dorsal portion of the cord, after a few hours, or a day or two, subsequently to the invasion of the cord by the disease, the reflexes in the parts below the lesion return and are considerably exaggerated. In central myelitis the reflexes are early, and permanently, abolished.

It is probable that in all injuries to the cord that completely sever the continuity of the cord at the seat of lesion, no matter whether it occur in the cervical or dorsal region, all reflexes below the point of severed continuity are immediately abolished, and remain so until the death of the patient. From the teachings of experimental physiology, we were formerly led to believe

that a complete solution of the continuity of the cord in the cervical or dorsal region was followed by an increase of the reflexes below. This is probably correct in some of the lower animals, but pathologic observations on man seem to prove that this is not the case with him.

Some two or three years ago, Bastian, of London, brought forward several cases in which the cord had been completely severed, either in the cervical or dorsal region, and in all of them the reflexes below the lesion were completely abolished. Since the report of Bastian's cases, several similar ones have been put on record by American and European writers. So far, I have observed four cases in which the cord was completely destroyed at a point above the lumbar enlargement, and in each one of them the reflexes below the cord-lesion remained permanently absent.

These observations are of more importance than we, at first thought, might be inclined to think. In cases of injury of the cervical or dorsal region of the spine in which all cord-functions, including the reflexes, both deep and superficial, remain absent several days, or for periods of indefinite lengths of time beyond this, no operation for the relief of pressure on the cord is justifiable. I wish to remind you again that slight lesions in the lumbar region of the cord may permanently abolish the reflexes, especially the knee-jerks, and that in lesions of the cervical or dorsal region there is usually an initial inhibitory abolition of the reflexes.

Whether the case of the patient who has been before us to-day is one of complete or partial destruction of the cord at the seat of lesion remains to be determined. I think we shall find at the autopsy that some of the fibers of the cord remain intact. You remember that all the reflexes below the eighth intercostal space, except the plantar reaction, are absent, yet the presence of this reflex, with the feelings that she experiences of drawing of the feet, and a tingling sensation in the parts below the knees, point to the existence of some undivided fibers of the cord.

What is the prognosis, both as to the immediate danger to the patient's life, and as to the permanent results of the disease, in cases of more or less complete destruction of cord-tissue at the seat of injury?

The seat of the lesion, whether it is in the cervical, dorsal, or lumbar region of the cord, has much to do with the immediate prognosis. When it occurs in the cervical region the prognosis is worst, because of the interference with respiration and the heart's action. When it occurs in the lumbar region the prognosis is worse than when it takes place in the dorsal, because of the great trophic disturbance, especially the formation of a large sacral bedsore. The immediate prognosis in lesions of the dorsal region is good, provided ascending myelitis does not take place. In our patient the inflammation has been gradually ascending for nearly two weeks, until now most of the intercostal muscles are paralyzed, and she suffers from severe attacks of dyspnea. The lungs are filled with mucous râles, so that life will not be prolonged beyond a few days or a week or two, unless the inflammatory process should cease to ascend, which is very improbable.

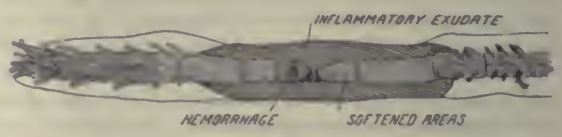
The permanent prognosis in all such cases as the one we have studied to-day is bad, even should ascending or descending myelitis not result. The cord recovers, at best, very imperfectly from lesions that destroy the integrity of its structure. In all severe destructive lesions, even in the dorsal region of the cord, life, at best, is but a lingering death, and the patient is made miserable and helpless from chronic ascending and descending degenerations.

The treatment of the patient has consisted in trying to make her as comfortable as possible; in endeavoring to lessen the inflammatory process; in paying especial attention to the bladder; and, at first, in trying to prevent the formation of bedsores, and, later, in treating the sores whose formation we were unable to prevent.

Subsequent history of the patient, with autopsy. The history of the patient after the lecture is briefly told. Life was prolonged much beyond the time anticipated on October 1st. The progress of the disease was slow, but steady. The plantar reflexes were not obtainable after the 2d of October, and no sensations were experienced in the legs after the 5th of October, seventeen days before death, which occurred October 22d.

At the autopsy, twelve hours after death, neither the abdominal, thoracic, nor cranial cavity was opened.

The body was greatly emaciated, and there was great edema of the legs and feet. The sacral bedsore was about six inches in diameter, and in its center nearly all the soft tissue had sloughed off, and the bone was exposed. Several small pressure-sores were found on the posterior portions of the legs, and on the buttocks and hips. On exposing the spinal canal, from the upper cervical region to the sacral, the external surface of the dura seemed to be in a normal condition, except that a few adhesions were found in the region of the operation. On opening the dura a thick layer of yellow pus was found surrounding the pia and cord from the fourth to the eighth dorsal vertebræ, throughout the extent to which the canal was exposed at the surgical operation which was performed



August 25th, nearly two months before. On placing the cord in water all the pus readily separated from the cord and membranes. The cord at the ninth dorsal segment was a soft pulpy mass, and on cutting it across at this point the softened cord-substance ran out, looking like pus, and showing the cord to be almost completely destroyed for a space of nearly half an inch in length. Some fibers of the anterior portion of the cord at the seat of the greatest softening had not broken down, but they were swollen and greatly softened. Immediately below the point where the cord-substance had been almost completely destroyed, a few blood-stained spots were found in the gray substance of the cord, but none were found above the destroyed area. On section of the cord into short segments, both above and below the ninth segment, the cut edges became everted, and the cord appeared swollen and softened up to the second or third segment above, and down to the lumbar enlargement below. The cord was preserved for microscopic examination. The macroscopic appearances of the cord and membranes are shown in the annexed illustration.

CLINICAL MEMORANDA.

AN OPERATION FOR RE-COVERING THE DENUDED CRANIUM.

BY HALDOR SNEVE, M.D.,
OF MINNEAPOLIS, MINN.;
LATE A. A. SURGEON NATIONAL MILITARY HOME, DAYTON, OHIO;
LATE ASSISTANT SUPERINTENDENT OF THE DAYTON ASYLUM FOR THE INSANE.

IN the early period of American frontier life, toward the close of the eighteenth century, an operation was practised, that for originality of design and boldness in execution has rarely been equalled in the annals of surgical science.

The operation consisted in making multiple perforations through the denuded external table of the skull down to the diploë, to invite granulation-tissue to appear in the openings thus made, in order to fill up the denuded spaces, and thereby protect the bare skull and prevent exfoliation of the bone, with consequent exposure of the brain.

In an address delivered at Nashville, Tenn., in April, 1855, and afterward published in the *Nashville Journal of Medicine and Surgery*, Dr. Felix Robertson describes the case of one Thomas Hood, who, in the year 1781, was scalped and left supposably dead by the Indians, but was afterward treated, by Dr. Robertson's father, in the manner described, the patient living many years afterward. He said:

"Dr. Robertson, Sr., had seen many persons who had been scalped in East Tennessee, and had there learned from a travelling French surgeon how to treat them. This was to perforate the outer table of the skull with a shoemaker's awl over the whole naked surface, making the perforations close together. Through these perforations, granulations sprang up, and, gradually spreading, finally united and formed a covering to the denuded skull before it should die and exfoliate, and thus expose the brain. I am sorry I cannot recollect the name of the French surgeon who introduced the practice, for he deserves to have his name immortalized for the great boon he bestowed on the frontier settlers of that day. This operation became in time so common that there were persons in every fort who performed it."

To an unknown French surgeon, therefore, belongs the credit of having conceived this most unique procedure. It would be interesting to know whether science or accident were responsible for the conception. A knowledge of the anatomy of the parts, and the physiologic laws governing the reproduction of tissues, could have suggested to him the operation; and, on the other hand, clinical observation of granulations springing from an exposed diploë might have done so. The knowledge of this procedure seems to have been lost after a time, as there are no records that I can find of its having been resorted to on the frontier during the last forty or fifty years, although numerous instances have occurred of individuals who have been thus mutilated by the Indians and recovered with bare crania.

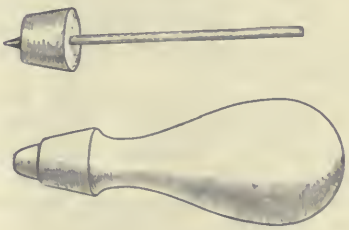
The late lamented D. Hayes Agnew, of Philadelphia, refers, in his *Text-book of Surgery*, to the case of a young lad in whom part of the parietal bones was exposed from a severe injury to the head, in which he adopted the procedure. He says: "Little red points made their appearance through the openings, but their ultimate destiny and their influence on the table were rendered negative by the sudden death of the patient from convulsions."

On October 11, 1888, T. J. W., forty-eight years of age, in fair state of physical health, was admitted to the Dayton (Ohio) Hospital for the Insane, suffering from dementia, and presenting a denuded space over the left parietal bone, of an oblong shape, about two and a half inches long, and two inches wide, caused by falling on a hot stove. The skull at this point was destitute of periosteum, and apparently healthy. The margins of the scalp were raw and unhealthy in appearance and constantly secreted an acrid, offensive fluid. During the following winter many efforts were made by the physician in whose ward he was to bring the margins of the scalp together, but without permanent success. In April, 1889, assisted by Dr. R. F. Gundry, I perforated the external table, making thirteen perforations at equal distances apart, one-eighth of an inch deep. The depth was determined by the feeling of lessened resistance to the instrument.

FIG. 1.

A small drill was procured, one-sixteenth of an inch in diameter, and a wooden cork placed over the end, leaving one-eighth of an inch of the drill-point projecting; the other end was fastened in an ordinary awl-handle. The denuded surface and instrument were then

FIG. 2.



rendered aseptic, and the drilling, which seemed to cause no pain whatever, proceeded with. A very small amount of blood-stained serum moistened the apertures. An antiseptic dressing was next applied and the patient dismissed. On the twentieth day, small red points were visible in the openings thus made, which grew rapidly,

spreading out until the entire bare surface was covered by healthy-looking granulations; these grew upward to the level of the surrounding scalp, and became covered in time by an unhealthy-looking cuticle, which ulcerated in spots repeatedly; to remedy this, small skin-grafts taken from the shoulder, after Reverdin's method, were applied, and the whole cicatrized nicely.

Two years after, the scalp at this point presented one or two small spots which alternately ulcerated and healed repeatedly; but, on the whole, the operation was a success, and the appearance was vastly superior to that of the denuded white bone.

The granulation-tissue was probably of low vitality, as is so often seen in the cicatrization of old tibial ulcers when extending down to or into the bone, and this is probably the reason of the imperfect skin-formation.

A short *résumé* of the anatomy of the parts under consideration may aid us in more clearly understanding how it is possible for granulation-tissue to sprout up through apertures in the outer table of the skull, and why it is so difficult to cover denuded surfaces on the skull with the scalp if any considerable loss of substance obtains. The diploë is a vascular tissue of varying thickness, situated between the two compact tables of the skull, and consists of bloodvessels, a small amount of areolar tissue, and medullary cells. (Kölliker.) The veins of the diploë are very numerous, and particularly large and tortuous; the canals containing them having sides formed of thin lamellæ of bone.

The coats of the veins are formed only of epithelium and rest on a layer of non-elastic tissue, so that when the bone is divided they remain patulous and do not contract in the canal in which they are contained. As age advances, the diploë is absorbed and compact tissue takes its place. The outer table varies a great deal in thickness; the locality, age, and race having much to do in its determination.

The scalp can surgically be considered as one structure, as the skin, areolar tissue, fascia, and aponeurosis of the occipito-frontalis are so intimately joined together and move in unison. Sutures that are subjected to any tension in wounds through the aponeurosis will usually tear out, because of the non-elastic structure of the scalp.

The knife of the Indian is now devoted to more peaceful pursuits than scalping, but machinery and traumata of various kinds perform this function frequently, and one of the objects of this essay is to call the attention of the profession to this almost forgotten resource in those cases in which ordinary means fail to restore the coverings of a denuded cranium.

There are two dangers connected with the operation:

1st. *Septic absorption*, with its sequelæ; rendered easy by the structure of the veins (non-contractile).

2d. *Perforation* of the *inner* table in very thin skulls.

Modern antiseptic surgery supplies the remedy for the first, and *care* will guard against the latter.

The Ophthalmological Section of the Pan-American Medical Congress has been organized with Dr. Julian J. Chisolm, of Baltimore, as Executive President, and Dr. J. Harris Pierpont, of Pensacola, as Spanish-speaking Secretary, and Dr. Geo. M. Gould, of Philadelphia, as English-speaking Secretary.

REPORT OF A CASE OF DERMATITIS MEDICAMENTOSA FROM IODOFORM, POTASSIUM IODID, AND ARISTOL.[1]

BY GEORGE G. HOLSTEN, M.D.,
DERMATOLOGIST TO THE BROOKLYN E. D. HOSPITAL DISPENSARY; PHYSICIAN TO THE BROOKLYN THROAT HOSPITAL, DEPARTMENT OF DERMATOLOGY.

ABOUT the 11th of October, the patient, a male, aged thirty-two, had been treated by some physician for an abrasion of the skin over the left elbow with iodoform and gauze dressing, and was told to return the following day to have the dressing renewed. Instead of doing so he permitted the dressing to remain on for several days, when, on account of the pain and swelling, he consulted a second physician, who gave him medicine and an ointment. The arm becoming worse, and an eruption having appeared on his hands, wrists, and various other portions of his body, he came to the skin clinic of the E. D. Hospital on October 25th.

The second physician had given him two medicines and an ointment. These were examined some time afterward. One medicine resembled Fowler's solution, but did not respond to tests for arsenic; the second was an aqueous solution of potassium iodid, presumably a saturated solution. Of this latter he had taken, beginning on the third day before I saw him, five drops every three hours, and had taken altogether about eighty drops. The ointment was apparently zinc ointment.

The left arm, from the shoulder to the finger-tips, was very much swollen. Covering the elbow were the remains of an immense bulla, fully ten inches in length, and almost encircling the arm. The peripheral portion was still filled with thin pus, while the central portion having broken down exposed a raw, oozing surface, with abundant exudation of serum and pus.

Over the left side of the thorax was a broad patch of erythema, made up of minute dots surrounding the follicular openings. In the center of the patch the edges of these dots touched each other, presenting an apparently homogenous appearance, while along the periphery the follicular redness became isolated.

The extensor surfaces of both hands and wrists presented a peculiar eruption. Both hands were swollen, bluish, and cyanotic, and scattered over them and the wrists were bluish-red macules of about one-quarter inch diameter, which toward their centers became raised and infiltrated, and minute papules, or vesicles, were seated on top of these slightly raised macules, or, more properly, maculo-papules. The center of each maculo-papule corresponded to a lanugo hair, which could be seen sticking through it. The palms were free. Over the notch of the sternum was a small patch of eruption similar to that on the hands. The first eruption (on the hands) had appeared five or six days previously.

The man was thin, poorly nourished, with universal glandular enlargement.

The suppurating surface was thoroughly irrigated with a saturated solution of boric acid, and dressed with an ointment containing 7 per cent. of ichthyol and 12 per cent. of boric acid.

By October 27th the eruptions on the hands and

[1] Read at the eighty-seventh meeting of the New York State Medical Society, February 9, 1893.

wrists were fading, and showed well their follicular site; the mouths of the follicles were more prominent than normally. Some of the papules on the chest-patch had become pustules. A few purplish-red papules had appeared on the legs. By the 29th the eruption on the hands had faded very much, only consisting of spots of a tawny-yellow to a brown color. A second eruption of bright-red papules had appeared scattered in the midst of the older fading eruption, yet likewise localized around the follicular openings, while here and there small, flaccid, sero-purulent bullæ had appeared on the hands. At the same time a bright-red, slightly raised, papular eruption had appeared over the entire chest. The ulcerated plaque on the elbow had healed, excepting a small area in the center; on this aristol was dusted. The following day this plaque had become very red, the ulcerated area was larger, and the patient complained of pain and heat. The aristol was thereupon discontinued. By November 5th all the eruptions had faded, so that but little remained of them. The abrasion over the elbow was entirely healed.

One of the striking features of this case is that the local application (and presumably the absorption) of an iodin compound gave rise to an eruption, not only around the site of local application, but also at quite a distance from it—on the chest and the opposite hand, with a considerable interval of sound skin. Another feature is the occurrence of the same phenomena a week later from the internal administration of a small quantity of another iodin compound, and the local reaction produced by still a third iodin compound; these three series of phenomena being a purely local effect from the aristol, a local and constitutional effect from the iodoform, and a constitutional effect only from the potassium iodid.

The local effect of iodoform on certain persons is that of an irritant, most probably due to the contained iodin. It is in all respects similar to the effects of any irritant on the skin, producing, according to the quantity employed, length of time of application, purity of the drug, and susceptibility of the skin, all grades of inflammatory reaction, from simple hyperemia to severe lesions of the skin, and confined to the site of application and the immediate surroundings.

When introduced into the system, however, whether by absorption through the skin, mucous membrane, or from some cavity, the eruption which may follow may appear on any portion of the body, either universally, or, as in this case, only in certain places. The eruption varies in intensity; it is most frequently erythematous, or eczematous, although quite severe lesions are sometimes produced.

Constitutional disturbances, which are generally of more frequent occurrence than are cutaneous manifestations, may or may not be present at the same time. These are at first slight anorexia, headache, depression or excitation, sleeplessness, slight delirium, but they may go on to violent headache, delirium, insomnia, and great prostration, with fever and emaciation, coma, and collapse. It has been observed that constitutional effects occur oftener after the prolonged use of iodoform, while exanthems appear earlier; further, that the more quickly the rash appears the more general is it likely to be.

The rapidity of an outbreak after the ingestion of an iodin compound differs very much. In some cases the eruption appears in a very short time—a few hours—after the first dose, while in others it may not appear until several weeks have elapsed. In this case there seemed to be an interval of from five to six days after the first application of iodoform was made, and the same period of time elapsed after the first dose of potassium iodid was taken.

The reaction of this patient to these three different iodin compounds showed a peculiar susceptibility to iodin in any form. It has frequently been observed that certain persons may have a susceptibility to iodin in one form, but have little or none to other forms of this element.

The reaction to the local application of aristol was so prompt and severe, causing pain and inflammatory symptoms and destroying newly-formed epidermis, that it is quite probable constitutional effects would have appeared had its use been persisted in.

This case was also of interest from the close resemblance the eruption bore to certain syphilitic eruptions, and it is this fact which probably led to the administration of the potassium iodid.

The first eruption on the hands resembled in color very much a papulo-tubercular syphilide, but was distinguished by the rapid development, absence of grouping, presence of erythema between the papules, and absence of the firm fleshy feel which the papulo-tubercular syphilides have.

The patches on the front and side of the chest, as well as the second eruption on the hands, had too rapid a development and were too localized to be an early papular syphilide. Further, the presence of hyperemia, itching, and burning, and the absence of the hard, almost shotty feel of a papular syphilide were points in differentiation.

340 Lafayette Avenue.

EXCISION OF THE GLADIOLUS FOR SARCOMA STERNI.

By SCHUYLER C. GRAVES, M.D.,
VISITING SURGEON TO THE U. S. A. HOSPITAL, AND SURGEON TO THE CHILDREN'S HOME, GRAND RAPIDS, MICH.

Mrs. D. D., aged forty-four years, came to me two years ago for carcinoma mammæ of the right side, situated in the upper and outer quadrant. The entire breast was removed, and the neighboring axillary space cleared of lymphatics, on January 18, 1891.

The case recovered promptly, and all went well until the latter part of September, 1892, when the patient discovered a small, painful nodule, the size of a large hazelnut, at the right edge of the sternum, attached to the costal cartilage of the third rib. The little tumor was watched carefully for a few weeks, and it grew quite rapidly. It was firmly fixed to the cartilaginous and osseous structures beneath. Immediate excision was suggested, but the patient did not consent until November 23, 1892, at which time the operation was done. My hospital notes afford the following summary of the case:

"About two months ago a nodule appeared near the right edge of the sternum, hard, painful, and attached to the underlying bone and cartilage. Malignancy was

suspected. The nodule grew rapidly, involving the costal cartilages of the second, third, fourth, and fifth ribs, and the corresponding edge of the sternum. On the foregoing date it was cut down upon and all the diseased tissue excised, necessitating the removal of a mass 3 inches by 3½ inches, including the sternal, or costal, extremities of the previously mentioned ribs; all of the gladiolus, save a bit at the inferior end and a slender rim to afford attachment to the left costal cartilages, and a portion of the manubrium. The operation was performed without lacerating the pleuræ costales, the separation between the same and the inner surface of sternum and cartilages being easily effected by the finger. Some hemorrhage from the internal mammary artery was encountered, which, however, was readily controlled. Otherwise, the operation was bloodless. A rubber drain was placed upon the pleural surface, with its exit at the throat, the natural tendency to drainage being in that direction because of a very full chest. The longitudinal wound was united by aseptic silk sutures and aseptic dressings applied."

The patient recovered without an untoward symptom, and without the formation of a drop of pus. The highest thermal rise was to 100.6° F., and the highest pulse-rate, 114. In two weeks she left the hospital for her home, and was soon interested in her housework, though her health has not become rugged.

I can find no reference in my library to excision of the sternum, as thus reported, except in one work, viz., Agnew, vol. ii, page 226. Here the author states that excision for disease should not be performed unless the condition warrants interference. Of course, the bone is very cancellous, and the disease liable to recur, but the operation, in the early stage of even malignant disease, in my opinion, is clearly justifiable.

One point of interest arose in connection with this case before the operation, viz.: Was this sternal growth secondary or primary? At first blush, one would suppose it to be secondary, but the facts that the axilla and mammary cicatrix remained perfectly free from recurrence, and the site of the disease was far from the track of lymphatic infection, would lead one to the opinion that the disease was not secondary. It is true that lymphatics from the antero-central portion of the thoracic wall accompany the internal mammary artery, but the disease under discussion was an outgrowth, primarily, from cartilage, and was not glandular. At first, prior to operation, it was impossible to know whether the neoplasm was a carcinoma or a chondro-osteo-sarcoma; but the pseudo-encapsulated or semi-encapsulated appearance of the tumor, together with the firm attachment to, and involvement of, the cartilage and bone, put the balance of evidence in favor of the latter.

The report of the hospital pathologist, Dr. S. A. Whinery, to whom the specimen was handed for microscopic examination, shows that our surmise was correct, the tumor belonging to the family of sarcomata.

The outcome of this case will be watched with great interest.

The Iowa State Medical Society will hold its forty-second annual session at Burlington, Iowa, and not at Des Moines, as stated in THE NEWS of February 11th, p. 168.

MEDICAL PROGRESS.

Successful Removal of a Perforating Epithelioma of the Calvarium in a Girl of Fourteen.—BRAUN (*Archiv für klinische Chirurgie*, xlv, 1, p. 186) has reported the case of a girl that, at the age of two years, was severely scalded upon the right side of the head, where subsequently a cicatrix formed. At the age of thirteen the girl was struck in this situation with a slipper, and ulceration of progressive character occurred. At the age of fourteen the tumor was excised, and the defect in the skin covered by grafting. The growth, however, recurred, and an ulcer formed upon its surface. The neoplasm was found to be attached to the bone, and pulsation became apparent at its center. No enlargement of the cervical glands could be detected. A section of an excised portion of the mass presented the histologic appearances of epithelioma. It was decided to remove the growth at two sittings. First, the superficial portion was removed by means of a sharp spoon, exposing a defect in the bone almost as large as a silver dollar. The surface was irrigated with a solution of mercuric chlorid 1 : 1000, and covered with iodoform-gauze. The dressings were changed every second day, and at the end of a week the second part of the operation was undertaken. This consisted in the removal of the remaining portion of the growth, and freshening of the edges of the perforation in the bone. Copious hemorrhage took place from the middle meningeal artery, and the operation was temporarily desisted from. Twelve days later an additional margin of bone was removed, the longitudinal sinus was inadvertently opened, and free bleeding occurred, necessitating the employment of an iodoform-tampon. The dura mater was opened and turned back, and after ligation of the pial vessels a thin section of cerebral tissue was removed by means of the thermo-cautery. The wound was covered with iodoform-gauze, and an occlusive bandage was applied. When the dressings were changed a slight prolapse of the brain was found, which increased in size. Some time later recurrence became evident, and the growth was again excised. A second recurrence necessitated repeated excision, after which there was no further recurrence. An attempt was now made to close the large defect in the bone. The surface was first freshened by means of the thermo-cautery, and the subsequent application of an ointment of boric acid. Then a bridge of bone and soft tissues was prepared from the adjacent structures, and applied in the open space. At a later period skin-grafting was practised, and eventually the wound closed entirely, the ultimate result being in the highest degree satisfactory.

Trephining for Intra-cranial Hemorrhage.—ELLIOT (*Boston Medical and Surgical Journal*, cxxviii, No. 6, p. 137) has reported a case of hemorrhage from the middle meningeal artery and one of subdural hemorrhage, in both of which relief was afforded by trephining, controlling the bleeding and removing the clots. In the first case, the patient had fallen a distance of twelve feet upon his head. Consciousness was lost and the pulse became abnormally slow. The pupils failed to respond to light, and the right was dilated. Convulsive movements occurred, and coma set in, with stertorous breath-

ing. No fracture of the skull was appreciable until the scalp had been reflected, when a linear fracture was found, extending from the parietal eminence down to the base of the skull. On trephining, without anesthesia, an extra-dural clot, as large as a small fist, was found, and the meningeal artery was seen spurting in the trephine-opening. The vessel was ligated by passing a curved needle through the dura, and the clot was removed. There was a deep indentation in the brain, in which the blood rapidly reaccumulated until it was packed with gauze. The frequency of the pulse increased from 40 to 100 during the course of the operation, and the patient became sensitive to pain, and moved his arms and legs. On the second day intelligence began to return. The wound healed rapidly and recovery was complete. The second patient was kicked by a horse, and was unconscious for about ten minutes. When seen, three hours later, consciousness had returned, but there was difficulty in speech. The protruded tongue deviated to the left. There was a compound fracture of the skull, two and a half inches above the ear, running upward and backward for two and a quarter inches. The depression was an inch wide and three-quarters of an inch deep. The skull was trephined, and the depressed fragments of bone removed. The dura appeared white and uninjured, but bulged into the wound and did not pulsate. Distinct fluctuation indicated the presence of fluid beneath. The dura was incised, and a quantity of blood was found in the arachnoid space. The hemorrhage continued until controlled by a deep packing of gauze. The patient made a prompt recovery. During convalescence there was slight paresis of the upper lip, and for several weeks the tongue deviated to the left.

Colpoporrhexis—Severance of the Cervix from the Body of the Uterus.—Bidder (*Centralbl. f. Gynäkol.*, No. 3, 1893, p. 40) has reported the case of a nonipara, thirty-seven years old, in which the first and third pregnancies had terminated in spontaneous labor, the children, however, being dead; the second and fourth pregnancies terminated in abortion; the fifth by induced premature labor; the sixth and the seventh by perforation; the eighth was complicated by placenta previa, requiring version and perforation of the after-coming head. The puerperia had all been uncomplicated. The last menstrual period had been in January; fetal movements were first perceived in the middle of June; the first labor pains appeared early in November. Three hours later the amnial liquor escaped. The pains persisted, subsiding, however, after four hours, following a particularly severe contraction. Slight hemorrhage from the vagina was observed and continued for a number of hours. Upon examination the abdomen was found tensely distended and sensitive, the fetus apparently occupying a transverse position, while a sense of resistance, thought to be dependent upon the presence of the fundus uteri, was appreciable above the umbilicus. The fetal heart-sounds were not to be heard. The vagina was large and relaxed. The fetal parts were not within reach of the introduced finger. The conjugate measured about three and a half inches. The patient was anesthetized; and upon the introduction of the hand within the vagina the fetal parts could be grasped; there appeared, however, to be a rupture of the uterus. The body of the child was delivered without difficulty, but the after-coming head had to be perforated and crushed. In view of all of the circumstances it was determined to open the abdomen. When this had been done it was found that the anterior segment of the cervix had been severed from the body of the uterus, an opening of communication existing between the cavity of the uterus and that of the peritoneum. It was now decided to remove the entire uterus. This was done, the wound was closed, and the vagina tamponed. The woman was dismissed in less than three weeks in good condition.

Tracheotomy in an Infant Three Days Old.—Heelas (*Lancet*, No. 3622, p. 195) has reported the case of a well-nourished infant, cyanotic from birth and presenting recurrent attacks of inspiratory dyspnea, with increased cyanosis. The lower jaw was receding and ill-developed, the tongue short, and the palate cleft. Eighty-three hours after birth the condition became suddenly worse, with great lividity of the lips, coldness of the extremities, and general collapse. The short tongue was with difficulty drawn forward, but without affording relief, and an unsuccessful attempt was made to pass a catheter into the air-passages. The child seemed to be dying, and tracheotomy was determined upon and completed without serious difficulty. The opening in the trachea was made below the isthmus and a small-sized india-rubber tube, cut short, was provisionally introduced. The breathing immediately became quiet, regular, and normal, and natural color returned to the lips. The child slept well and took peptonized cow's milk fairly well from a spoon. In a few days a silver tube was substituted for the rubber one. The wound healed well. Respiration through the natural passages was daily attempted; but it was found that, while the child could easily expire and cry out it could not inspire when the opening in the tube was covered with the finger. The little patient continued to do well for nearly three weeks, when symptoms of pneumonia developed, and it was seized with convulsions and vomiting and soon died. After death three ounces of pus were found in the right pleural cavity, with slight consolidation of the right lung. The trachea was normal, except for a small spot of superficial erosion at a point corresponding with the lower extremity of the tube. The tongue was short, but broad and thick. By falling upon the epiglottis, obstruction to the passage of air could readily have been induced.

Rupture of the Small Intestine Caused by a Tapeworm.—Dunlap (*New York Medical Journal*, lvii, 6, p. 166) has reported the case of a woman, thirty-one years old, who, without premonition, was seized with violent pains in the left iliac region, soon followed by prostration. Symptoms of shock were at first not pronounced; but in the course of several hours these became unmistakable and rupture of an ectopic gestation-sac was suspected. A boggy mass was appreciable upon bimanual examination, and this, together with repeated attacks of syncope, seemed to indicate the occurrence of abdominal hemorrhage. When the abdomen was opened, the pelvis was found to be filled with recent blood-clot, while the uterus, ovaries, and tubes were perfectly normal. An aneurism was looked for; none was found. In flooding

the abdominal cavity, to free it of clots, a long tapeworm was floated to the surface. The parasite could be traced to a large ragged rupture in the small intestine. Here there were two bleeding-points, which were secured; but attempts to dislodge the entire worm were unsuccessful. As about two-thirds of the lumen of the intestine was gone (the length of the opening being about an inch and a half), and the edges were ragged and gangrenous, the bowel was resected and the freshened margins united by Lembert sutures. Vomiting continued for thirty hours after the operation, but ceased after an enema of an ounce each of glycerin and magnesium sulphate in a quart of hot water was given. Recovery was thereafter prompt and satisfactory. From the abdomen there had been removed about eight feet of tapeworm, and with the enema there came away seventeeen feet more.

Successful Splenectomy for Wandering Spleen.—At a meeting of the Clinical Society of London, BLAND SUTTON (*British Medical Journal*, No. 1668, p. 1334) reported the case of a woman, twenty-two years old, who had become cognizant of the presence of a movable swelling in the left half of the abdomen, which became the seat of acute pain, with which were associated vomiting and diarrhea. An exploratory operation showed the tumor to be a greatly enlarged, movable spleen, with a twisted pedicle. The pedicle was untwisted and the organ returned to the left hypochondrium. The woman did quite well for some time, but after the lapse of more than three months the swelling reappeared and the patient was suddenly seized with acute abdominal pain, vomiting, diarrhea, and hemorrhage from the vagina. The spleen, at different times, found its way into the most various situations, so that finally it was determined to perform splenectomy. The removed organ weighed sixteen ounces; its texture was normal. Recovery ensued without complication. No difference was observed between the number and proportion of blood-corpuscles before the operation and those after operation.

Sponges for Surgical Purposes.—SIR JOSEPH LISTER (*British Medical Journal*, No. 1674, p. 162) prepares sponges intended for employment in surgical procedures, by washing them first with soap and water, and afterward with sodium bicarbonate; then thoroughly again with water; finally, after drying, they are steeped for a considerable length of time in a solution of carbolic acid, 1:20. After operations sponges are thrown into a tank of water and permitted to putrefy. They are then washed until they no longer discolor the water. Finally they are placed in a solution of carbolic acid, 1:20.

An Additional Bacillus Found in Water.—While studying the water of the river Spree, at Berlin, for the purpose of detecting cholera-bacilli, should they appear, GÜNTHER (*Deutsche medicin. Wochenschr.*, 1892, No. 49, p. 1124) came across a comma-bacillus which, however, he found to bear no relation either to the cholera-bacillus or to the other organisms that have any resemblance to the cholera-bacillus, differing from all in its behavior in culture-media. In a small number of experiments the organisms displayed no pathogenic action. The name *vibrio aquilis* is proposed.

Ischio-pubiotomy.—PINARD (*La Médecine Moderne*, No. 3, 1893, p. 33) has reported the case of a woman, thirty-eight years old, who was tardy in learning to walk early in life, and who presented an oval oblique pelvis, probably with synostosis of the right sacro-iliac symphysis, the antero-posterior diameter being about three and one-quarter inches. She first became pregnant at the age of thirty-two, basiotripsy being required for the successful termination of the labor. Two years later, she became pregnant a second time. Labor was induced prematurely and podalic version performed; the child, however, survived but a short time. In two years the woman again became pregnant and passed through a difficult labor. A year later a fourth pregnancy was terminated in the eighth month, the fetus dying. The woman became pregnant once more and greatly desired to have a living child. Symphysiotomy was deemed impracticable and ischio-pubiotomy was practised at the onset of labor. The horizontal and the descending ramus of the pubis on the side of the ankylosis were sawn through, about two inches from the middle line, and the infant was readily extracted by means of the forceps. The wound in the soft tissues was closed by sutures. By the ninth day it had closed. The woman arose from bed on the twentieth day.

Incarceration of the Small Intestine by the Vermiform Appendix.—At a meeting of the Medical Society of Hamburg, SIMMONDS (*Deutsche medicin. Wochenschr.*, No. 51, 1892, p. 1171) presented specimens obtained from the body of a man, twenty-six years old, who a year ago had had an attack of perityphlitis, from which he had recovered. A few days before his death the man presented symptoms of acute intestinal obstruction and general peritonitis. At the post-mortem examination the appendix was found much elongated, bulbous at its extremity, containing a calculus, and attached to the root of the mesentery. The small intestine had slipped through and was constricted by the loop thus formed.

THERAPEUTIC NOTES.

For Scabies.—A five per cent. solution of creolin may be applied with a brush two or three times a day, followed by a hot bath or a washing with soap at night. Excoriated points are not touched. The application should be repeated once, or oftener if required.—*Corr.-bl. f. Schw. Aerzte*, xxiii, 3.

Arsenic for Epithelioma.—At a recent meeting of the Berlin Medical Society, LASSAR (*Deutsche medicin. Wochenschr.*, No. 4, 1893, p. 95) reported the successful employment of arsenic, in some cases administered by the mouth, in others subcutaneously, in the treatment of epithelioma. The diagnosis was based upon the microscopic appearances. Two cases were demonstrated.

For Exophthalmic Goiter.—

℞.—Ferri et quininæ citrat. . . gr. xxx.
Tinct. digitalis . . . ♏xxx.
Tinct. chirettæ . . . ʒjss.
Aquæ . . . . ad ʒv.—M.
S.—Two tablespoonfuls three times daily, after meals.

The Practitioner.

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SATURDAY, MARCH 4, 1893.

THE MEDICAL TEACHER.

THE famous DR. SAMUEL JOHNSON made the following statement: "A Doctor of Medicine is a man who can teach the art of curing diseases. This is an old axiom which no man has as yet thought fit to deny, *Nil dat quod non habet.* Upon this principle, to be Doctor implies skill, for *nemo docet quod non didicit.*"

It is true that every capable and conscientious physician is to some degree a teacher, if not always of the community in which he resides, at least of his patients and friends, in the preservation of health and the cure of disease. Those who contribute useful articles to medical journals are engaged in medical teaching, and so is the qualified medical journalist himself.

But for our present purpose, rejecting the broad definition of medical teaching suggested by Dr. JOHNSON, as well as the more limited one just indicated, let us ask what are the essential qualifications of the teacher in a medical college.

These qualifications are the possession of knowledge, to which constant additions are being made; the power of imparting that knowledge; and having a strong, just, and honorable personality, or character.

In regard to the first qualification, it is obvious that one must first know in order to tell or teach.

This knowledge includes not only the present, but also the past, for that past often includes lessons that are brought forward as new. The words of CICERO: *He remains a boy who does not know what has preceded himself*, have just application in medicine. One who studies professional literature so often meets with illustrations of this puerile condition that he is ready to exclaim with OXENSTIERN, "My son, behold with how little wisdom the world is governed." We could give some instances from recent medical literature of knowledge adduced as new which is really more than half a century old, and of inaccuracies of statements arising from such ignorance, suggestive of the truth of Cardinal NEWMAN'S assertion: "Boys are always more or less inaccurate, and too many, or rather the majority, remain boys all their lives."

In a department of knowledge so progressive as medicine the teacher must be alert that no important step escapes his notice. He must have maturity of judgment, accuracy of reasoning, and breadth of culture; he will not at once accept the new as necessarily true, but prove all things, holding fast to that which is good.

Medicine, once a servile art, and the physician a slave, is now a liberal profession, and, therefore, he who has become a freeman must beware of being subject to the bondage of false opinions and prejudices if he would prove worthy of being a teacher in any of its departments. And in this connection, did space permit, we would be glad to dwell upon the injurious effect that specialism, however greatly beneficial to the advance of medicine, has upon the individual in the unequal development of his intellectual nature, unless this is counteracted by other studies. Let one read what DARWIN wrote at the close of his life as to "the atrophy of part of his brain," to understand what is here meant.

The medical teacher must not only possess knowledge relating to the department he teaches, but he must know how to impart that knowledge to others. To suppose that every man who is thoroughly conversant with a subject can make such exposition of it that the mind of average power will comprehend it is a pernicious and preposterous delusion. As DUPUYTREN has said, the attention must be awakened in order to perceive the most common things, and he who cannot awaken and hold the attention of his auditors fails in public speech; many who hear will

know as little of what he has said as TENNYSON'S "Northern Farmer" did of the parish priest's sermon. As every great picture has in it something which says: Look at me, so every qualified speaker has that in his manner which also says: Listen to me. The thoughts, the images, the knowledge he has, he reproduces as though with pictorial power, so that these are vivid in the minds of others. While such speech must be carefully studied in advance, it is more readily listened to if extemporaneous instead of written; beside, under the stimulus of attentive auditors there will flash out in the fervor of utterance new illustrations, or fresh exposition, as may seem necessary for the perfect understanding of persons as the speaker reads their faces and learns the necessity for further explanation; he has learned the power of thinking when on his feet, to assist previous preparation. HOMER admirably expresses this idea when he says:

> "This man with energy of thought controls,
> And steals with modest violence our souls;
> He speaks reservedly, but speaks with force,
> Nor can one word be changed but for a worse."

Finally, the medical teacher must possess character. By character we mean personal integrity, purity of heart and life, nobleness of impulse and action; one who has these qualities is lifted above sordid and selfish ends, petty intrigues and political management, and regards the highest life as that which does the most good, and continually seeks to attain this ideal.

Such men as J. K. MITCHELL, HUGH L. HODGE, ALONZO CLARK, AUSTIN FLINT, WILLARD PARKER, J. MARION SIMS, SAMUEL D. GROSS, and D. HAYES AGNEW are among many of our famous departed worthies who honored their calling and impressed upon numbers of students in greater or less degree their characters, not only imparting knowledge, but inspiring them to lives of honor, usefulness, and goodness.

VENESECTION IN PULMONARY TUBERCULOSIS.

THERE is scarcely an affection (at one stage or another) in which venesection, like many another useful therapeutic agent, has not been recommended. Nevertheless, there can be no doubt that there are certain indications that are met by bleeding better than by any other measure. There is reason to believe that bleeding has a greater field of useful application than we of the present generation actually realize. In many diseases there occur periods in which the organism were better off for for the removal from the bloodvessels of a fluid that is stagnant and saturated with noxious matters. The suggestion of bleeding in the treatment of anemia seems at first sight paradoxical, but it can readily be understood that under certain conditions bleeding may prove capable of pronounced good. Pulmonary tuberculosis has hitherto been considered one of the contra-indications to venesection. HUGGARD (*British Medical Journal*, No. 1674, p. 171) has, however, presented facts that go to show that in some cases of pulmonary tuberculosis, in plethoric individuals, in which the disease-process is latent, but in which a tendency to hemoptysis exists, relief may be afforded by judicious venesection. As the occurrence of hemoptysis favors reinfection or the recrudescence of a dormant process, the desirability of its prevention is obvious. Venesection should be restricted to those cases of pulmonary tuberculosis marked by recurrent hemorrhage, preferably, but not necessarily, in the first stage, in which there exists a condition of plethora, with a pulse of high tension, and the general health is good, with freedom from marked constitutional symptoms (such as night-sweats, elevation of temperature, and debility). In these cases the occurrence of hemorrhage is generally preceded either by a sense of fulness in the head and a feeling of general heaviness, or by a feeling of unusual well-being. Under the conditions first named, the plethora is probably decided, and the bleeding is likely to be followed by a sense of relief; under the conditions second named, the plethora is probably relative, and the bleeding is followed by some degree of prostration.

ANIMAL PRODUCTS IN THERAPY.

THE use in therapeutics of substances derived from the animal kingdom is not altogether novel; we need but refer to cantharides, to the digestive ferments, and to vaccine; but the developments of a few years past lead in a somewhat new direction and indicate that ere long a number of products of animal origin equal in power and importance to such vegetable derivatives as quinine, strychnine, and morphine will be placed in our hands. The usefulness of the thyroid gland in the treatment of myxedema, and perhaps of some other affections, *e. g.*, cretinism in an early stage; the usefulness of

the serum of dog's blood and of goat's blood in the treatment of tuberculosis; the limited usefulness of pancreatic preparations in some cases of diabetes mellitus, are instances of one aspect of the problem—that of supplying to the organism substances normally present, the absence of which causes disturbance of function, auto-intoxication with katabolins, or lessened power of antagonizing specific toxins. The usefulness, in some cases of pneumonia, of tetanus, and of diphtheria, of antitoxins present in the blood-serum of human convalescents or of inoculated animals, or developed in inanimate culture-media, illustrates another aspect.

Finally, the testicular injections of BROWN-SÉQUARD, the infusion of nerve-substance and similar experiments, while as yet not only inconclusive but applied most unphilosophically, nevertheless indicate that various tissues and juices of animals contain substances of toxic and therapeutic power, which deserve study, and for which important uses may be found.

EDITORIAL COMMENTS.

Germany and the Pan-American Medical Congress.—The Secretary-General of the Pan-American Medical Congress, Dr. Reed, has, with the approval of Dr. Pepper and Dr. Mastin, addressed an open letter in reply to that of Czerny (see THE NEWS, February 11, 1893, p. 165) relative to the participation by Germany in the work of the Congress. Attention is called to the fact that to have attempted an organization in Germany or any other European countries in the interest of the American meeting, would have been in violation of loyalty to the International Congress, while an official invitation to the government and medical societies of Germany and other European countries to send delegates to the Washington meeting would have been almost equally inimical to the interests of the Rome Congress. It was therefore resolved that the organization should be limited to the American countries, and that, while it was desirable to secure the attendance of distinguished confrères from Europe as guests, invitations to that end should be strictly personal in character, and should be issued by the general officers and presidents of sections, at their discretion.

The languages chiefly spoken by the peoples of the various constituent countries of the Congress are Spanish, Portuguese, and English, and these were accordingly selected by the committee as the official languages of the Congress. French, which is the language of important colonies and communities, was subsequently added, at the instance of confrères in Brazil, who employ it largely in scientific communication, as, indeed, do a large proportion of the physicians of both the English- and Spanish-speaking countries. Danish and Dutch are not included, because it is extremely, indeed practically, impossible to deal with them satisfactorily in a literary way in this country. It was hoped that delegates from countries and colonies speaking other than Spanish, Portuguese, English, and French would furnish remarks on papers in one of the official languages. This was so thoroughly understood by the committee and has become such a well-established usage at international congresses, that it was not deemed necessary to state it explicitly.

Arrangements have been made for the special sailing of a steamer on September 9th, directly to Italy, by way of the Azores and Gibraltar, to take those desiring to attend the Rome meeting, a special reduced rate being accorded for the occasion.

Assurance is given that European confrères who may honor the Pan-American Medical Congress with their presence will be accorded every linguistic privilege, that arrangements have already been made for their return to Italy in time for the International Congress, and that in the event of their coming they will be greeted with a most cordial American welcome.

The Quarantine Committee of the New York Academy of Medicine, at a previous meeting had been discharged, as it now appears, through a certain combination of misunderstanding and non-understanding of the true question at issue. A special meeting of the Academy was held on February 24th, at which matters were straightened out and the committee reappointed. The pretext made for discharge of the committee was that in advising concerning sanitary questions not directly connected with the quarantine, the committee had gone beyond the powers committed to it, and that the dignity of the Academy as a scientific body was compromised by what was stigmatized as "politics."

It is fortunate for the good name of the profession and for its influence in the community that the narrower view of the function of the profession was voted down by the sound sense of the members of the Academy. *Nolens volens*, the profession is made the guardian of the public health, and it should decidedly and emphatically be *volens*. Only as it recognizes its public functions and speaks with a determined and harmonious voice upon them can it merit the past legal sanctions bestowed upon it, and bring about the desired extension of privilege and power that should speedily be given to it. This plan of scuttling to the burrows of "calm scientific discussion" in the face of public duty and danger is itself disgraceful politics, arrant nonsense, or neglect of duty —probably all three combined.

Medical Etiquette.—The *Boston Advertiser* concocts, and the *Philadelphia Evening Telegraph* copies, with profound seriousness and assurances of genuineness, a long story of a dying patient being forced to submit to the treatment of a detested physician in charge of "a patient with a raging fever," because, called in in emergency, he would not turn the case over to the family physician, who was desired by the patient and family. Neither would the family physician take charge of the case, because of "professional etiquette." Thereupon the newspaper moralist belabors the whole profession, and argues against giving the regular physicians any further "monopoly." The quacks (and by this is

meant the genuine unadulterated quacks, the wizard kings of pain, for example, and the manupathists) should not be forbidden by law, because the educated physicians by their "rules of etiquette" would most surely become "a huge pool or trust, and an imposition on the public." Were the fact not before our eyes, it would hardly be believed that two highly repectable papers could be brought at this stage of civilization to publish such egregious tomfoolery. Such things hint at the deep-seated, almost ineradicable hatred of the medical profession that so long survives in the public mind.

Butterine in the State of New York.—THE MEDICAL NEWS of January 30, 1892, contained an article by Professor Caldwell, of Cornell University, scientifically demonstrating the excellence and usefulness of oleomargarine. Despite the fact of this excellence, politics has kept upon the New York statute-books a law forbidding the use of this food-product by hotels, restaurants, etc. The law failed to prohibit its use by State institutions. After careful investigation, Dr. Blumer ordered a supply for the Utica State Hospital, procuring the same at seventeen cents a pound, and testifies that it is "a more palatable and acceptable article of food" than dairy butter for which the hospital had to pay twenty-two and a half cents. Although this is a saving of several thousand dollars a year to the State in one institution, the Governor of the State demands an amendment to the law extending the scope of the interdiction to the State institutions.

State Aid for Hospital Purposes.—The University of Pennsylvania asks for help from the State for hospital extension and administration, and gives cogent reasons why the bill for this purpose before the Legislature should be passed. No body of men do for the public the amount of gratuitous work, and no work done is of more value to the community than that performed by the physicians of a properly organized and rightly conducted medical school and hospital. And yet no labor or profession is more inadequately rewarded by the community than this of medicine. With a four years' obligatory course of study, with a limitation and fixation of the professorial salary, and with an administration not aiming at private but at professional and public good, there remains no reason against and every reason in favor of granting the State aid asked for.

A Method of Publishing Hospital Reports Without Expense.—From Michigan comes a very remarkable hospital report. It reminds one of the curious "albums" found in hotels devised by advertisers to get one's eye on the advertisements deftly inserted near other and more (or less) attractive matter. The report is lavish in typographical and engraved work, the advertisements of face masseurs, of manufacturers of crackers, boots, furniture, of dealers in oysters, liquors, etc., occupying one page, and the hospital report the alternate page throughout the volume.

A Four Years' Course at the Woman's Medical College of Pennsylvania.—No student can now enter this college and graduate under less than four years. Thus the oldest school for women has joined the ranks of truly medical colleges in requiring four courses of lectures as essential for the doctorate. The friends of genuine medical education must rejoice, as one after another our institutions recognize the changed conditions and elevated standards demanded by modern medicine and civilization. To those *first* taking the stand of their own free will instead of being driven into it, all honor is due.

D. Hayes Agnew Memorial Children's Ward.—A committee of which Dr. S. Weir Mitchell is chairman, and composed of representative medical men of Philadelphia, solicits contributions for the building and endowment of a ward at the University Hospital as a memorial to the honor of Dr. Agnew. Beds in perpetuity can be endowed for $3000, or annually for $200. Large and small amounts will be gladly welcomed. This is a noble movement and deserves to be speedily and enthusiastically successful.

Regulation of Medical Practice in Connecticut.—A bill is now before the Legislature of Connecticut providing for boards of examination to license practitioners, each of the three "schools" being allowed its own independent board. Five reputable physicians constitute each board, nominated by the State Board of Health upon the recommendation of the medical societies. That even this enactment would be progress and advance upon the condition of the past is a fact suggestive of reflections, wise or otherwise.

The "Canadian Practitioner" is somewhat belated in its appearance for January, but makes amends by presenting itself in a new dress and a new arrangement. The dignity of the *Practitioner* would be increased, we are convinced, if it dropped the practice of interleaving its text with advertisements. Ordinarily it is optional with the reader whether or not he shall consult the advertisements of his medical journal; and he is likely to be offended to have them thus thrust under his nose, as it were.

The New Mesmerism.—The result of Mr. Ernest Hart's investigation of the new hypnotic feats exhibited by the patients of Dr. Luys, of Paris, is, that the patients were "tricksters of the most barefaced kind. Some of them were very clever actors, possessing dramatic powers which might have been turned to better purposes; most of them were utterly venal, and some confessed that they played upon the credulity of Dr. Luys for their own purposes." It is a sorry history, due to the want of good Anglo-Saxon common sense.

Aseptizable.—A correspondent of the *Journal of the American Medical Association* suggests the word *Aseptizable* to describe the character of instruments capable of being rendered aseptic. This would be in harmony with the words *aseptize* and *aseptization*, which are now coming into use. But why not form the word from our perfectly regular form, *asepticize*, and thus have *asepticizable?*

A Truthful Advertiser.—Patent-medicine men do tell the truth sometimes. A recent advertisement in the *Public*

Ledger of this city says: "*There is already a great demand for the specific at the retail drug-stores in Philadelphia*, where about every third man has a cold since the recent blizzard, with more than half a hundred deaths every week. *Mortality from this cause has increased more than 33⅓ per cent. within a month.*" The italics are ours.

The Operation of Unilateral Pubio-ischiotomy, recently applied to a Naegele pelvis by Prof. Adolphe Pinard, of Paris, with entire success to mother and child, if critically examined in the light of the operator's own statement, will be found to be altogether different from that denominated "bi-pubiotomy" by Prof. Gennaro Galbiati, and performed by him on March 30, 1832, in the Incurabili Hospital of Naples. In this case, the conjugate measured only an inch; the bones were divided on each side, and the anterior part of the pelvis lifted up by the passage of child. The fetus was dead, and the woman died of gangrene of the genitalia in four days. In the Pinard case, the conjugate was 8.5 cm. ($3\frac{1}{16}$ in.); the right sarco-iliac synchondrosis was ankylosed; the os pubis on the right side was sawn through under direct incision, and the wound then sutured; the ascending ramus ischii was treated in the same way. In extracting the fetus the left side of the pelvis opened like a hinge and the sawn part of the os pubis separated one inch.

The First Symphysiotomy in London was performed at the London Hospital on February 12, 1893, by Dr. Arthur H. N. Lewars, with entire success. The pelvis of the patient was just a little too small to admit of delivery by means of the forceps after a faithful trial, and pubic section was preferred to craniotomy, which would have permitted an easy delivery, but with a dead fetus. As it was, the section was performed with some difficulty for the want of a proper knife, and one bistoury was broken in the trial. The patient promised to do well. In 116 years symphysiotomy has been performed but twice in England, the first operation proving fatal to both mother and child, because of the poor condition of the subject. This operation was performed by Mr. John Welchman, at Kingston, on September 4, 1782. The case was one of malacosteon in a woman reduced fourteen inches in height, and bearing a dead and putrid fetus.

New Buildings for the Surgical Clinics of the University of Vienna.—Those who have visited the surgical clinics of the University of Vienna must have been struck by the inadequacy of the accommodations for both operator and student. The announcement will therefore be received with gratification, that it has been proposed to begin during the current year the construction of new buildings for the clinical work of Professors Billroth and Albert, which are to be pushed to a speedy completion.

Consultation with "Gentlemen."—"The Code of Ethics must be changed to allow consultations with *all legally qualified physicians* who are not advertisers or abortionists or worse. Any educated man who is a gentleman should be met in consultation without hesitation."—*Lanphear's Kansas City Medical Index.*

Please define the terms "educated man" and "gentleman."

SELECTION.

THE BICHLORID OF GOLD TREATMENT OF DIPSOMANIA.

BEING determined to find out something definite about the matter, early last spring I obtained a position as physician to a gold-cure sanitarium at a distance from the city, and have carefully studied the cure up to within a few days ago. As I have had personal experience in treating about three hundred cases, both in and out of the aforesaid sanitarium, I feel that the few remarks I can make may be of interest to you. And first, I am prepared to give you the formulary of the gold treatment, which is almost, if not quite, the same in all of these institutes, as follows:

No. 1. Tonic. Known in the institutes as the "dope:"

℞.—Aurii et sodii chlorid. . . . gr. xij.
Strychninæ nitr. . . . . gr. j.
Atropinæ sulph. . . . . gr. ¼.
Ammonii muriat. . . . gr. vj.
Aloin. . . . . gr. j.
Hydrastinin. . . . . gr. ij.
Glycerini . . . . . ℥j.
Ext. fl. cinchon. comp. . . ℥iij.
Ext. fl. coca erythrox. . . . ℥j.
Aquæ dest. . . . . ℥j.—M.

S.—1 dram at 7, 9, 11 A.M., at 1, 3, 5, 7, 9 P.M.

No. 2. The injection known in the institutes as the "shot:"

℞.—Strychninæ nitr. . . . . gr. $9\frac{1}{10}$.
Aquæ dest. . . . . ad ℥iv.
Potass. permangan. q. s. to color.—M.

S.—Begin with gtt. 5, which equal gr. $\frac{1}{10}$, and increase one drop at each injection until the physiologic effect is produced. Four hypodermatic injections to be given daily, beginning at 8 A.M., then at 12 M., 4 P.M., and 8 P.M.

No. 3. Used with No. 2:

℞.—Aurii et sodii chlorid. . . gr. 2½.
Aquæ dest. . . . ad ℥j.—M.

S.—Gtt. 3, every four hours, in combination with the strychnine solution, for the first four days.

This last prescription is used only for the moral effect, which is produced in the following manner: Five drops of the strychnine solution are drawn into the syringe, and then three drops of the gold solution are drawn in and mixed. This produces a golden-yellow color, to which attention is called, and the patient is further assured as to the reality of the presence of the gold by the stain left on the skin after the hypodermatic needle has been removed.

A positive disgust is in almost, if not in every instance, produced in the following manner: The patient is given a drink of whiskey, then the so-called bichlorid of gold solution, really a solution of strychnine, is injected in his arm, but at the same time, and without his knowledge, he receives one-tenth grain of apomorphine. It takes but a comparatively short time for the emetic to

produce its effects; more or less violent emesis is produced, and the patient soon associating the in-taking of the whiskey with the subsequent disagreeable and sickening vomiting, acquires a positive disgust for the liquor, and is not able to keep any on his stomach. Now he acknowledges the wonderful power of the hypothetical gold compound, and surrenders unconditionally. He is converted, and from an unbelieving scoffer is changed into a disciple and supporter of the prophet. These are the cases that are the most widely advertised, and that have done the most good for the "Keeley Institute" folks.—CHAUNCEY F. CHAPMAN, M.D., PH. G., *in the Chicago Medical Recorder, February, 1893.*

CORRESPONDENCE.

SOME THOUGHTS ON THE OBSTETRIC EXAMINATION AS TAUGHT BY CREDÉ AND LEOPOLD.

To the Editor of THE MEDICAL NEWS,

SIR: Any method that tends to make the science of obstetrics more exact, and guards the delivery of the mother from those unseen yet potent enemies that seem always on the alert for an opportunity to do harm, must be welcomed by the thoughtful members of the profession. It is hardly possible for everyone to take the same point of view or to agree entirely with dogmatic teachings. Experience frequently shows theories, however attractive on paper, to be absolutely impracticable in every-day work.

The doctrine of thorough asepsis in obstetrics, as well as in surgery, has doubtless saved many lives, and any paper that insists upon this practice must be considered sound, even if we cannot always approve of the methods recommended. Every teacher of the profession must expect criticism; thorough discussion only tending to increase the good results aimed at.

The appearance of an extract in a recent medical journal[1] from the fifth edition of the *Text-book of Obstetrics for Midwives*, by Prof. E. Credé and Prof. G. Leopold, private medical counsellor, laying down with so firm a hand directions so opposite to the views held by a number of the profession in this country, and suggesting some procedures novel, at least to me, leads me with all modesty to present my criticism for the better understanding of the subject.

While the treatise under consideration is ostensibly for midwives, a careful perusal of the paper in question shows that it is intended as well for the instruction and guidance of the medical practitioner.

The obstetric examination is divided by these authors into the external and internal. It is in the former that the methods are novel, and aim to learn so much more of the condition of affairs than is the custom in this country. Inspection, auscultation, and palpation are the means employed. We have hitherto been accustomed to employ these aids to diagnosis, but have never attempted to learn so much as is now claimed to be possible.

The general position and size of the child, the amount of liquor amnii, any deformity of the woman's frame, hernial wounds, etc., we have looked for; but we are now instructed in the use of four manipulations that are intended to supplant almost entirely the internal examination upon which we have depended so much.

In the first manipulation the palms of the examiner's hands are passed gently over the abdomen of the woman, defining the position of the fundus of the uterus in relation to the navel and the ensiform cartilage; whether the child lies vertically or transversely; whether the head or breech lies in the fundus; and the approximate size of the child.

This is, I may say, routine practice, and has little novel about it. The second manipulation has for its object the finding of the back of the child, and calls for no comment.

In the third manipulation the examiner spreads the fingers of the right or left hand as far apart as possible, and "with the thumb and tip of the middle finger seizes the presenting part of the child just above the pelvic inlet."

In very many instances this procedure must be extremely difficult, if not impossible. The natural fat and tense walls of the abdomen offer insurmountable obstacles to the exact determination of the mass felt. It is true that the head of the child can be felt, if there; but it would require a master hand to determine *accurately* the position of head. The difference between the head and the breech could also be recognized, but that "if felt uncommonly covered, indistinct, and somewhat softer than usual, the suspicion is justified that the placenta lies in the lower uterine segment" is rather doubtful. Might it not be omentum or intestines?

This manipulation is said to be of great value when the presenting part remains either in or above the pelvic inlet. If, however, it is in the cavity or outlet of the pelvis, then the fourth manipulation is of importance.

This consists in passing the "finger-tips of both hands slowly and gently from above along the sides of the pelvis *into its cavity!*" This procedure is only equalled by the next, when the pelvis is examined externally: "For this purpose the finger-tips of both hands are advanced from both sides into the *sacral region of the pregnant woman*, there to examine the curves (?) and width of the sacrum, as well as the *direction and mobility of the coccyx*, in order to determine thereby the inclination and *curvature* of the pelvis."

Is it possible for any man to so pass the fingers of both hands into the pelvis of any woman, pregnant or not, through the abdominal walls, as to feel the curve of the sacrum and direction and mobility of the coccyx? Either the German women have very thin and elastic abdominal parieties or the German physicians have great powers of penetration.

I think enough has been quoted to show the novel features of this method of examination. Why all this has been advised, and so much stress laid upon it when the authors proceed to describe the internal examination by means of which all that is aimed at in the new plan can be determined by the old way so much more accurately and quickly, and with certainly less pain and annoyance to the patient, is a question. Nothing can be claimed on the score of modesty, on which stress is laid, even to covering the woman's face, nor can the comfort and well-being of the patient be promoted by this pressing, squeezing, and forcing of the examiner's hands into

[1] N. Y. Journal of Gynecology and Obstetrics, December, 1892.

the tissues of the parturient woman. Besides all this, it undoubtedly lacks accuracy.

Indiscriminate, frequent, and unnecessary internal examinations are properly decried, but it cannot be denied that the safety of the patient is more perfectly assured when the accoucheur is thoroughly posted as to the condition of the vulva, vagina, and pelvis of the mother, and the presentation and position of the child. The method that safely and accurately informs him on these points is the one to follow.

Asepsis of the examiner's hands is demanded, and rightly so, but whether neglect or the careless practice of this precaution lays the practitioner open to the liability of legal prosecution in this country in case the puerpera becomes ill or dies, as it appears to do in Germany, is a question which I am not aware has ever arisen here.

A parturient woman should herself be cleansed externally; but few American women of any class would submit to having the pubic hair cut short, and then be scrubbed every three hours, *at least* for five minutes, with warm water, soap, and brush, then three minutes with a 2½ per cent. carbolic acid solution over the mons Veneris, upper part of the thighs, anus, buttocks, etc.

One internal examination seems to be all the authors allow, claiming that with the continued use of the external, especially the fourth manipulation, no further internal examination will be required. Nevertheless, they insist, further on, that as soon as the membranes rupture a careful internal examination *must* be made to determine whether an arm or the umbilical cord has descended alongside of the head. Here, at least, is something that the external examination cannot discover.

Two statements, which probably more than any other opinions expressed, led to a careful study of this article, were these: "It is nothing less than *criminal* to try to assist in the stage of dilatation by attempting to stretch the cervix with the fingers and to push back the anterior lip of the cervix"; and ". . . for when the os is not completely dilated the lower uterine segment is forced down into the small pelvis, the uterine walls at that point are incarcerated between the head and the bony pelvis, thus causing swelling and inflammation of the margins of the os."

This second quotation is used in speaking of the inadvisability of stimulating pains in the first stage, and is applied here to illustrate a condition of affairs which frequently arises in labors which have not been in the least interfered with. This latter paragraph seems to point so directly to a cause of delay and danger to both mother and child, when the procedure so harshly and so unjustly condemned would be the proper one to pursue, that I addressed the two following questions to five prominent and widely known obstetricians of my acquaintance and append their replies:

1. "Do you consider that it is nothing less than criminal etc., etc. ?"

2. "What would be your course of treatment when the os is not completely dilated, etc., etc. ?"

DR. JOS. PRICE: "Neglect or delay in pushing back the thickened edematous anterior lip of the uterus fixed under the pubic arch, results in needless contusion, sometimes slough, and always in a protracted labor. In multiparæ, with lacerations, with a club-shaped anterior lip, a short posterior lip, the method of pushing the cervix with the broad surface of the right index finger above the pubic arch, and assisting the head clearing during a contraction, is a wise practice. 2. Pushing up the whole anterior circle of the cervix during contraction favors complete dilatation and the head clearing without deep laceration. The practice is a wiser one than multiple incision, also wiser than the premature application of the forceps."

DR. THEOPHILUS PARVIN: "As a rule, all efforts to dilate the os with the fingers in an ordinary case of labor are wrong, and may be very dangerous. Only in exceptional cases do I think such dilatation justifiable. As to the second question, I am somewhat puzzled. Supposing the translation to be correct, and understanding that incarceration does not mean strangulation, I should first employ antiseptic injections of warm water, *e.g.*, creolin or lysol in water, using these abundantly and at brief intervals. Only in case of actual strangulation or threatened uterine rupture would I resort to dilatation, instrumental or digital, or to incisions, or, in case the child was dead, to lessening the size of the presenting part, followed by extraction."

DR. BARTON COOKE HIRST: "I should be sorry to think the procedure criminal, for I have often resorted to it with undoubted benefit, and I shall continue to do so in suitable cases. In reply to the second question, I might do one of several things. I should first try the procedure already mentioned, unless the os was smaller than a dollar, when I would use Barnes's bags."

DR. EDWARD L. DUER: 1. "If it be criminal to assist dilatation by endeavoring to stretch the os with the fingers, I am repeatedly criminal. Indeed, when the os has been previously torn and the anterior lip is caught between the fetal head and the pubic arch, labor comes to a standstill without this manipultion, as I have repeatedly seen. 2. My own practice, when the os is not dilated and the whole cervix is thus compressed by the uterine segment falling into the true pelvis, is, first to give a large hot injection (vaginal) of antiseptic water, wait a short time, then push up the anterior lip quite forcibly above the pubis, between the pains, and endeavor to hold it there when the pain comes on, doing just what Credé and Leopold condemn. Yet from such practice I have never seen aught but good results, and probably have resorted to it hundreds of times. Of course, this may be supplemented by any medication that will quiet and relieve nerve-tension. With the greatest respect, however, for the two great names which endorse the criminality of the procedure quoted, I must have further personal observation of its dangers before considering myself criminal in resorting to it."

DR. HOWARD A. KELLY: "I feel with others that there is imminent danger in handling the cervix with the fingers if the examiner has not previously most carefully sterilized his fingers.

"I do not believe, however, that with sterilized fingers there is any danger. When the blue, congested cervix is jammed down between the head and the arch of the pubis, pushing it back over the head up into the pelvis I consider an important maneuver, not only justified, but requisite under some circumstances."

It is not always safe, as Dr. Hirst said in his reply, to be guided by the dicta of German professors of obstet-

rics, as they live in large hospitals, see nothing of the practice of obstetrics as we know it, only being called in when there is some serious complication. I heartily indorse that opinion, and believe that the majority of American practitioners will continue to use the internal examination as often as seems necessary, and rely upon that, and also assist in the stage of dilatation when the comfort and welfare of the patient require it.

ALEXIS DUPONT SMITH, M.D.

PHILADELPHIA, PA.

NEWS ITEMS.

Pan-American Medical Congress—New By-Laws.—Languages: By-Law IX. Papers may be read in any language providing that authors of the same shall furnish the Secretary-General with an abstract not exceeding six hundred words in length in either of the official languages (English, Spanish, French, or Portuguese) by not later than July 10, 1893, and providing, further, that a copy of every such paper shall be furnished in either of the official languages, at or before the time of the meeting, to the Secretary of the Section before which the same shall be read. Remarks upon papers may be made in any language, providing that members making such remarks shall furnish a copy of the same in either of the official languages before the adjournment of the session.

Publication: By-Law X. All papers read either in full or by title shall be immediately submitted for publication in the *Transactions* (Special Regulation 3), but authors may retain copies and publish the same at their pleasure, after the adjournment of the Congress.

Constituent Organizations: By-Law XI. All medical, dental, and pharmaceutical organizations the titles of which have been transmitted with approval to the Committee on Organization or which may hereafter be transmitted with approval to the Executive Committee by any member of the International Executive Committee, each for his own country, shall be subject to election by the Executive Committee, approved by the President, as constituent bodies of the First Pan-American Medical Congress, and each organization thus constituted shall have the right to designate as delegates all of its members attending the Congress, but no such organization shall meet at the time and place of meeting of the Congress as a distinct body, providing that the Secretary of each such constituent body shall furnish a list of officers and a statement of the number of members of his respective organization to the Secretary-General not later than sixty days before the meeting of the Congress, and shall forward a list of delegates chosen to reach the Secretary-General before the opening of the Congress.

The Section on Medical Pedagogics will devote its attention especially to the history of the development of medical education in America and to the art of teaching.

Dr. J. Collins Warren, of Boston, is the Executive President; Dr. Charles L. Scudder, of Boston, is the English-speaking Secretary, and Dr. Wm. F. Hutchinson, of Providence, R. I., is the Spanish-speaking Secretary.

The Section on Anatomy of the Pan-American Medical Congress will be devoted to the study of human and comparative anatomy and of biology as departments of natural science, as well as in their relations to practical medicine and surgery. Members of the medical profession in Latin-American countries are urged to prepare scientific communications to be read before the section. Much valuable material will thus be collected, and articles of scientific value will find permanent place in the *Transactions* of the Congress. Dr. John B. Roberts, of Philadelphia, is the Executive President; Dr. D. S. Lamb, of Washington, D. C., is the English-speaking Secretary, and Dr. A. M. Fernandez, of New York, is the Spanish-speaking Secretary.

An Army Medical Board will be in session in New York City during April, 1893, for the examination of candidates for appointment to the Medical Corps of the United States Army, to fill existing vacancies.

Persons desiring to present themselves for examination by the Board will make application to the Secretary of War, before March 15, 1893, for the necessary invitation, stating the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from which they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal knowledge, from at least two physicians of repute, as to professional standing, character, and moral habits. The candidate must be between twenty-one and twenty-eight years of age, and a graduate of a regular medical college, as evidence of which, his diploma must be submitted to the Board.

Further information regarding the examinations may be obtained by addressing the Surgeon-General U. S. Army, C. Sutherland, Washington, D. C.

BOOKS AND PAMPHLETS RECEIVED.

The Uses and Abuses of Cocaine with Reference to Mucous Membranes Especially. The Voice and its Treatment. Hobbs's New Tonsil Knives and Hooks. By Augustus G. Hobbs, M.D. Reprint, 1892.

Braithwaite's Retrospect of Medicine. Vol. CVI. July to December, 1892. New York: G. P. Putnam's Sons, 1893.

Transactions of the Medical Society of Virginia. Twenty-third Session. Richmond, Va.: J. W. Ferguson & Son, 1892.

A Clinical Description of Dysentery as it Occurs in Nicaragua. By Judson Daland, M.D. Reprint, 1892.

A Volumetric Study of the Red and White Corpuscles of Human Blood in Health and Disease, by the Aid of the Hematokrit. By Judson Daland, M.D. Reprint, 1891.

A Clinical Study of Eleven Cases of Asiatic Cholera Treated by Hypodermoclysis and Enteroclysis. By Judson Daland, M.D. Reprint, 1893.

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ORIGINAL ARTICLES.

CHOLESTEATOMA OF THE EAR.

BY HARRY FRIEDENWALD, A.B., M.D.,
LECTURER ON OPHTHALMOLOGY AND OTOLOGY AT THE COLLEGE OF PHYSICIANS AND SURGEONS, BALTIMORE, MD.

The subject of this paper, though long known in medical literature, has only in late years received much attention. American text-books on otology, with few exceptions, mention it in short paragraphs. And while special journals contain many contributions to the subject, it has not been brought sufficiently before the profession in journals devoted to medicine in general.[1] It is needless to add that the subject is not understood by the profession as it deserves to be.

And yet this disease was found by Virchow[2] in nearly one-third of the number of fatal cases of ear-trouble. This fact alone should make it an object deserving careful study. Its many peculiarities, and the ingenious and varying theories as to its nature, add greatly to the interest.

The disease presents itself as a bright, white growth of pearly luster. Its surface is smooth. On handling it readily breaks up into distinct layers, which are placed concentrically over each other. It contains no blood-vessels, and, when examined with the microscope, is seen to be made up of layers of large, flat, non-nucleated, polyhedral cells, which lie stratified in layers that cling more or less firmly to each other. These cells are in every respect similar to the cells of the outer layers of epidermis. Between the layers of cells we usually find cholesterin crystals.

Such growths are found in the middle ear—in the tympanum and in the mastoid cells. They lie in these cavities, which are frequently enlarged, and closely fill them, so as to show accurately the configuration of the cavity in their form. The cavities are smooth, unless they have become carious. They are lined with a very thin membrane, which consists of a layer of periosteum, upon which lies a rete Malpighii, just as in the skin, and which gradually passes over into flatter and flatter cells that finally lose their nuclei and become the flat cells described already. The latter are placed directly upon the lining membrane, which must be regarded as the capsule that surrounds and produces the growth.

This epidermic growth is known as "cholesteatoma," a name given it by Johannes Müller,[1] because of the cholesterin crystals, which he looked upon as the characteristic feature of the growth. It is also called "pearl tumor" (Cruveilhier[2]) or "margaritoma," (Virchow[3]) from its peculiar pearly luster. This it owes to the interference of light by the many fine layers of cells.

The growth varies greatly in size; it may be smaller than a pea or as large as a hen's egg. In practice it is often difficult to decide whether a small collection of flattened epidermic cells in the middle ear is or is not a cholesteatoma.

The growth is most frequently found in the upper and posterior part of the tympanic cavity, but it often extends into the mastoid cells, where it distends the bony cavities by pressure, and where it may perforate the bone externally, or internally, into the cranial fossa. Politzer recently reported a case in which the large growth filled the middle ear, part of the mastoid and part of the auditory canal, and in which it had destroyed the entire internal ear.[4]

Cholesteatoma is often found associated with chronic suppuration of the middle ear, with perforation or destruction of the drum-head, and with polypi of the middle ear. It often develops long after this disease has run its course. But the growth has been found without any other or any previous disease of the ear, and with a normal drum-head. As is well known, it occurs in other parts of the body; it has been found in other cranial bones, in the brain, in the spinal cord, in the mamma, the ovary and the testicle.

The epidermic growth, which we have thus found to form in the tympanic cavity and the mastoid cells, would appear to be a heterologous tumor, for the middle ear is lined by a mucous membrane, which consists partly of columnar and ciliated cells, as in the Eustachian tube, and partly of much-flattened non-ciliated cells.

The explanation of the presence of epidermis in

[1] The following publications are the only ones I could find. Orne Green: Boston, Med. and Surg. Journal, 1881, on Desquamative Inflammation of the Middle Ear. Randall: Journ. Am. Med. Assoc., 1890, on Cholesteatoma of the Ear.

[2] Quoted by Bezold, Arch. of Otol., vol. xix, p. 233.

[1] Ueber d. feineren Bau d. Geschwülste, 1838.

[2] Anat. Path., liv. ii.

[3] Virchow's Archiv, 1855, vol. viii.

[4] Wien. med. Wochenschr., 1891.

such spaces as the middle ear and mastoid cells is not easily given. Various theories have been advanced. Before we consider them we shall study the clinical aspect as presented by a few cases.

CASE I.—A gentleman, aged twenty-three, first seen March 23, 1891, had had for two months ringing in the right ear and a slight but very offensive discharge. He had had ear-trouble previously, and had been slightly deaf for a long time. Tests for hearing: Watch, 4 cm.; whisper, 0; and voice, 8 m.; Rinné, positive; tuning-fork in Weber's experiment heard in the right ear. After cleaning the external auditory canal, which contained much white, cheesy-looking matter, I found that there was a perforation, about 2 mm. in diameter, in the upper part of the drum, just above the prominent point of the handle of the malleus, known as the short process. The perforation lay in that part of the drum-head called Shrapnell's membrane, or the *membrana flaccida*, from its fine structure. By means of a fine Hartmann canula, which was passed through this perforation, a great quantity of white matter was washed out of the cavity situated beyond. After getting the cavity as clean as possible, it was dried by cotton, and iodoform was then carried into the cavity through the opening. This treatment was kept up at intervals for about four weeks. Less and less matter could be washed out of the cavity, and the discharge ceased entirely; at the last visit the cavity seemed to be perfectly clean; the hearing had improved. The white matter was cholesteatomatous substance.

Perforations in Shrapnell's membrane are not common. They are often found with little or no affection of the rest of the drum, the disease seeming to run its course in the small space in the upper part of the middle ear, between the malleus and the outer wall. This space frequently does not communicate with the rest of the middle ear, or communicates only in the posterior part, so that blind sacs are formed. These perforations are associated with a form of suppurative inflammation which is very chronic, and which, from the proximity to the brain and the thinnesss of the intervening plate of bone, is exceedingly dangerous to life. Their chronicity is due, according to Bezold, to the fact that "stratified epidermis is constant behind these perforations."[1] Many observers have called attention to the frequency of cholesteatomatous masses in the attic (or upper part of the middle ear) in these cases.[2] It is true, that these epidermoid cells often form only irregular masses, while the typical cholesteatoma is composed of regular layers. Nevertheless, it seems impracticable to make a clinical distinction, as it is impossible to find a sharp pathologic difference.

[1] Arch. of Otology, vol. xjx, p. 246.

[2] See Kretschmann (Arch. f. Ohrenh., xxv; reviewed in Arch. of Otol., xvii, p. 263), and others.

CASE II.—A young man, aged twenty-one, applied at the City Hospital Dispensary for treatment July 13, 1891, complaining of a discharge he had from the right ear since childhood; which had had its origin in some severe illness (bilious fever?). He had been treated for a long time by different physicians, without any improvement. Several polypi were found, which were scraped off with the curette, and some pieces of dead bone were then likewise removed. After this had been accomplished, a white substance was seen in the upper part of the middle ear. It could not be removed by injection alone, but had first to be dislodged by probes. The large cavity, which was then exposed, was further cleaned, and it was then seen that the whole attic of the middle ear was exposed, the plate of bone forming part of the outer boundary of the middle ear having been entirely destroyed. The ossicula were also lost. At first the patient was treated with a mixture of iodoform and benzoin, but after the cholesteatoma was removed there was no discharge, excepting once for a few days. After removing a small polypus which had returned, the discharge ceased. I then saw the patient at intervals of several weeks for a few months, and at the last examination I found but little epidermis in the water, after washing out the middle ear.[1] He heard the watch on firm contact. His left ear is normal, but there is a small opening in Shrapnell's membrane—as was likewise found in Case I, in the healthy ear. The fact has been pointed out by Walb and by Bezold, that it is not uncommon to find "on one side a perforation of Shrapnell's membrane with suppuration, on the other side a small aperture at the upper pole of the middle ear."[2]

I submitted some of the slides prepared from the matter removed in Case II to Professor N. G. Keirle, pathologist of the City Hospital. He agreed that the substance removed from the ear was composed of typical cholesteatomatous cells.

In Case II we have the cholesteatoma in the same location as in Case I, but it has enlarged, encroached on the walls, and destroyed the outer wall entirely.

CASE III has already been published under the title of "A Case of Extensive Caries and Cholesteatoma of the Mastoid Process, without Local Signs of Inflammation; Death from Thrombosis of the Lateral Sinus and Meningitis."[3] I shall refer only to those points which bear upon the subject under discussion. The patient, a young man, had had chronic suppurative inflammation of the middle ear since childhood. He had many polypi; there was a slight but very offensive discharge. An attack of severe pain came on about the middle of March, 1890, and the patient was not able to work for about five weeks, when he apparently recovered, and considered himself well again. This period of quiet lasted only about five weeks, when pyemia,

[1] Recently the patient again returned to the Dispensary with a slight discharge.

[2] Arch. f. Ohrenh., xxvi, p. 185.

[3] Arch. of Otology, vol. xx, p. 1.

due to erosion of the lateral sinus, suddenly set in, from which the patient died. The *post-mortem* examination, which Professor Keirle had the kindness to make, showed that there was a large cavity in the temporal bone, which had been filled by a cholesteatomatous growth. This cavity occupied almost the whole mastoid process, and had ulcerated this bone both externally and internally, thus opening the lateral sinus. This case shows the extent to which these tumors grow, though, as I have mentioned, they may become much larger still.

In this case there was extensive caries, and the tumor had partly degenerated, especially that part nearest the middle ear.

I wish to mention, parenthetically, that small collections of cholesteatoma were found in the lateral sinus at a considerable distance from the point of erosion.

The three cases related are examples of various degrees of this affection; other cases, similar to them or intermediate in degree, might be described. I shall furnish only one more, which will illustrate the serious symptoms that may arise from the presence of a small cholesteatoma:

CASE IV.—The patient, aged about forty-five years, had had a discharge from the right ear for three or four years. The ear-trouble followed an affection of the throat. During the last year he had had several very severe attacks of pain, which were treated by several physicians with various instillations. When I was called in through the kindness of his family physician, Dr. C. H. Jones (May 6, 1892), I learned that the man had been sick for several weeks, suffering with great pain in the ear and head. When I saw him the pain was so intense that he could not lie down, and he had passed several sleepless nights. The patient had slight fever (100.4° F.). On examination a small polypus was found in the posterior and lower quadrant of the membrana tympani, covered with a little pus. Over the prominent short process of the hammer there was a small perforation about 2 mm. in diameter, very much as in Case I. In this there was likewise a drop of pus. It is necessary to state that the otorrhea had stopped, or was very scant for some time. The ear was cleaned, and the polypus scraped away in great part with a curette. The perforation in the upper part (in Shrapnell's membrane) was washed out by means of Hartmann's canula. This was not sufficient; it was necessary to use bent probes (sharp and blunt ones) and forceps to remove the large flakes which appeared in the opening. In this way a large quantity of dense white scales was removed, which showed the characteristic lamellated arrangement and the pearly luster. Having removed this, steam was applied to the ear, and in a few hours there was a great flow of very offensive pus. At the same time the patient experienced relief.

The ear was cleaned daily in the same way, but in about five days the discharge again decreased, and pain reappeared, especially in the right occipital region, which appeared slightly swollen. In the upper perforation there was some carious bone (malleus?) which seemed to act as an impediment. The perforation was therefore enlarged downward and backward. The opening exposed polypoid masses in the middle ear. The patient improved greatly after this. The opening above was further extended, so as to meet the lower perforation, and the polypi were curetted and treated with absolute alcohol. He continued well for several weeks, during which he used the absolute alcohol. But on June 4th pain again came on, which gradually increased for several days, and the swelling in the occipital region reappeared. The means which had hitherto relieved him failed to give relief, and so he was prepared for an operation.

Operation, June 7th. At the time of the operation the patient was in great pain, and there was great sensitiveness to pressure, especially in the right occipital region, where there was a very general swelling. It was not possible to detect fluctuation with certainty, but I convinced myself that by pressing I could force a drop of pus from the perforation in Shrapnell's membrane. It was decided to open the mastoid process first. The surface of the mastoid was found normal, as was likewise the interior. It was opened to the extent (in depth) of about one cm. It was next decided to make a deep incision through the swelling in the posterior portion over the occipital bone. This opened into a large abscess-cavity, reaching far forward under the sterno-cleido-mastoid muscle. The contents were very offensive pus. A careful examination did not reveal any opening in the bone, which it was suspected lay on the inner surface of the mastoid process. The two wounds were united in the deeper parts, and iodoform-gauze passed through from one to the other. After the wounds had been thoroughly disinfected with a sublimate solution they were dressed with iodoform-gauze.

The subsequent course of the disease was very favorable; the wounds closed very rapidly, without leaving a fistula. The middle ear is now clean and dry; the two perforations which were united are now separate again. There is no suppuration. The patient uses instillations of a 2 per cent. solution of salicylic acid in absolute alcohol.

I have related this case to show the danger of small cholesteatomata in the attic. It is impossible at present to extract any cholesteatomatous matter from the upper perforation with the tympanic canula or with the probe. This by no means renders it certain that there is none deposited there, for we know that this matter is sometimes so tough that it cannot be washed out;[1] yet it is probable that we have removed it.

Let me mention that we find cholesteatomatous matter in other forms of chronic suppuration of the middle ear, in cases in which perforations exist at other parts beside the membrane of Shrapnell.

[1] In a case published by Gorham Bacon, the cholesteatoma would not yield even when exposed to a stream of water, and had to be scraped out. (Arch. of Otol., xviii, p. 391.)

Turning now to the pathology of this growth, one will get but little information in text-books. In Billroth's *Pathology*, cholesteatomata are regarded as sebaceous cysts or atheromata, "especially those that are congenital, on the forehead, temples, or face, filled with a milky or light-yellow pulp, which, under the microscope, shows little beside epidermic scales and crystals of cholesterin."[1] This is not the description of the tumor as we now regard it. It is true that Toynbee[2] looked upon them as such, and believed that they originated in the external auditory canal, but his view has long since been shown to be erroneous.

Virchow[3] describes cholesteatoma as an *epithelial neoplasm*, composed of concentric layers of flat polygonal non-nucleated epidermoid cells, covered with an exceedingly fine capsule; a heteroplastic tumor, whether found in the pia mater or in the bones of the skull. Occurring as it does in mesoblastic tissues, he finds it analogous to *epithelial carcinoma*.

Those occurring in the pia mater are now believed to be formed by the proliferation of the subarachnoid endothelium, due to some unknown irritation. The proliferated cells become flattened by pressure against each other. Those of the mamma, the ovary, and the testicle, develop from the glandular epithelium of these organs.[4]

The views concerning the genesis of cholesteatoma of the ear have been widely different. Various observers have attempted to find the origin of cholesteatomata in the embryonic development of the labyrinth from an involution of the epiblast (Bœttcher,[5] Schwartz,[6] Mikulicz,[7]) or, on the other hand, in an involution of epidermis in the first branchial cleft, which develops into the Eustachian tube and middle ear (Kuester).[8] They would thus be congenital tumors similar in their nature to dermoid cysts.[9]

There is no doubt that Virchow's theory holds good for some cases of cholesteatoma of the middle ear. Of the cases which fall under this head, one recently published by Kuhn[10] may be mentioned. The patient, aged fifty-one years, had never had any ear-trouble, and had been able to hear well till about one year before he was treated. During this year he had at first tinnitus at intervals, and later on dizziness accompanying the tinnitus. On his taking a severe cold, pain immediately set in, with fever and great local inflammation. Twelve days afterward he was operated upon, and a cholesteatoma as large as a hen's egg was found filling the whole mastoid process. This, as Kuhn believes, was in all probability a cholesteatoma which originated in the mastoid process.

A view distinctly different from the foregoing is that cholesteatoma is an inflammatory product from the surface of the mucous membrane, which is retained in the spaces of the middle ear, or the cells of the mastoid process, and by gradual accumulation forms the tumor. This is the theory of Von Troeltsch.[1]

The difficulty encountered here lies in explaining how a cavity normally lined with a mucous membrane can cast off cells of an epidermoid form, and even more, can take on all the characteristics of epidermis with a well-defined rete Malpighii. How are the products of inflammation changed into epidermoid cells? This has been answered in various ways. Troeltsch believed that the product of inflammation (pus), by irritating the mucous membrane, causes a great production of cellular elements, changed in form by the pressure. There are many objections to accepting this view.

Wendt[2] answered the questions in quite another manner. He regarded the epidermoid mass as the product of a desquamative inflammation of the mucous membrane of the middle ear; for this membrane, as he had found, may take on all the characteristics of epidermis when exposed by a large perforation of the drum-head.

It has recently been shown by Schuchardt[3] and others that analogous changes are found in simple ozena, the ciliated epithelium of the nasal cavity being converted into epidermis. The change of laryngeal mucous membrane into epidermoid tissue (*pachyderma laryngis*) as described by Virchow,[4] is to be remembered in this connection, as well as the change which takes place in the mucous membrane, when it is exposed to the air, as in rectal or uterine prolapse or in nasal or uterine polypi: the part exposed to the air becomes hardened and epidermoid.

A novel explanation has been offered by Lucae.[5] Finding cholesteatoma commonly associated with

[1] Amer. ed. (1883), p. 753.

[2] London Medical Gazette, Nov., 1850. Toynbee, Diseases of the Ear, 1860.

[3] Virchow's Archiv, 1855, vol. viii, p. 371; also, Verhandl. d. Berlin. med. Gesellsch., Feb. 13, 1889.

[4] See Glaeser, Virchow's Archiv, Bd. cxxii, p. 394.

[5] Arch. für Anat. u. Phys., iii, 1869.

[6] Krankh. d. Ohrenh., 1885, p. 221.

[7] Wien. med. Wochenschr., 1887, p. 953.

[8] Berlin. med. Gesellsch., Feb., 1889; Deutsche med. Wochenschr., 1889, Nos. 11–13.

[9] As such they were classed by the older pathologists. See Rokitansky (Allg. pathol. Anatomie), Billroth, and others. True dermoid cysts have been found in the mastoid process. See Steinbruegge, in Orth, Spec. path. Anat., p. 62.

[10] Arch. of Otol., xx, No. 4, p. 291.

[1] Arch. f. Ohrenh., 1868, vol. iv, p. 97.

[2] Arch. f. Heilk., vol. xiv.

[3] Referred to by Schmiegelow, Arch. of Otol., xx, p. 254.

[4] Deutsche med. Wochenschr., 1887, p. 694.

[5] Arch. f. Ohrenheilk., vol. ii, p. 305.

aural polypi, he was led to believe that there was a proliferation of epidermis on the polypi, and that this, by gradual desquamation, produced a cholesteatoma. In certain cases described by Kuhn,[1] the cholesteatoma was found attached to the floor of the middle ear. It is supposed that these may have been produced in the manner described by Lucae. Another fact bearing on this theory is the discovery by Moos and Steinbruegge,[2] Schwartze,[3] and Weydener,[4] of cholesteatoma pearls in the substance of polypi of the middle ear.

It may not be improper to mention here that Politzer has found cholesteatoma pearls in the substance of the mucous membrane in chronic inflammation of the middle ear, and that he believes that some large cholesteatoma may arise from these.[5]

New light has lately been thrown upon this subject by the researches of Habermann[6] and Bezold.[7] It is shown that when large perforations exist, and especially when the drumhead becomes adherent at the edges of the perforation with the inner wall of the middle ear, or when the tip of the handle of the malleus becomes adherent to the promontory—the prominent portion of the inner wall, which lies opposed to it—(conditions which are very common when the perforations are large), the epidermis or external layer of the drum membrane "gains ascendancy over the mucous membrane, and extends with much greater rapidity over the entire district."[8] This is analogous to the development of epidermis in the bladder, urethra, and kidney from a vesical fistula after an operation for stone.[9]

This fact, which is now accepted by many, is explained by the peculiar lateral growth of the epidermis of the drumhead and external auditory canal, which is seen in the slow migration of blood-specks from the center to the periphery of the drum or the formation of long, rolled-up ribands (Bezold), or of "a membranous diaphragm" in the auditory canal at a distance from the drumhead (Buck)—[10] both being shed epidermis, which owe their form to the "surface motion" peculiar, so far as is known, to the epidermis of this part. The proof that epidermis may extend from the tip of the handle of malleus into the antrum[11]—the most common seat of cholesteatoma—and give rise to such a growth was furnished by a pathologic specimen of Habermann.[1]

Bezold,[2] who accepts this view of the migration of epidermis from the external auditory canal into the middle ear, has lately extended its significance. He is convinced that simple tubal catarrh is frequently the cause of retraction and perforation of Shrapnell's membrane, a fact pointed out by Walb.[3] He believes that the edges of such perforations adhere to the walls of the space within (Prussak's space), and that extension of the epidermis over the walls of these spaces will follow, the cavity will be filled by desquamation—in short, the nucleus of a cholesteatoma is formed. It increases in size, and extends into the antrum. Thus Bezold explains the fact that the antrum and upper part of the middle ear are often the seat of cholesteatoma, and the other fact that cholesteatomatous matter was found in almost all of his cases of chronic suppuration with perforation of Shrapnell's membrane. He does not insist upon this being the only manner in which cholesteatomata are formed, but he holds that many are produced in this way.

Politzer believes that the tendency of the epidermis to extend into the middle ear is much greater at the periphery of the drumhead than in the center, and he calls attention to the fact that cholesteatoma is more common when the perforations are peripheral than when they are central. He describes several pathologic specimens which sustain this view.[4]

There are, then, various ways of explaining the presence of epidermis in the middle ear. It is certain, however, that this alone does not furnish the explanation of the growth of cholesteatoma, but that, as Steinbruegge[5] suggests, there are other unknown conditions necessary for their development.[6] Steinbruegge believes this factor to be a chronic dermatitis. This would ally the affection with desquamative inflammation of the auditory canal and the drum membrane.

If we bear in mind the cases of cholesteatoma that have been reported, without any history of previous inflammation, while, on the other hand, it is certain that many owe their origin to inflammatory affections of the middle ear, we will hesitate to accept any explanation as the only one. As is frequently the case, so here it is probable that the various theories do not conflict, but that each serves

[1] Arch. f. Ohrenheilk., xxvi, p. 63.
[2] Arch. of Otol., xi, p. 376.
[3] Arch. f. Ohrenheilk., vii, p. 304.
[4] Arch. of Otol., xiv, p. 77.
[5] See his text-book.
[6] Arch. f. Ohrenheilk, xxvii, p. 42; Naturforscher-versammlung in Heidelberg, 1889.
[7] Zeitschr. f. Ohrenheilk., xx, p. 5; Arch. of Otol., xix, No. 4.
[8] Bezold: Archiv. of Otol., xix, p. 242.
[9] Case of Marchand, see Glaeser, Virchow's Archiv., Bd. 122, p. 40.
[10] Manual of Disease of the Ear, p. 98. New York, 1889.
[11] A cavity above and communicating with the middle ear.

[1] Loc. cit.
[2] Loc. cit.
[3] Arch. f. Ohrenheilk. xxvi.
[4] Wien. med. Woch., 1891, No. 8.
[5] Steinbruegge: Orth's Spec. Path. Anatomie.
[6] A number of cases have been published (Schwartz, Politzer) in which epidermis lined the middle ear, but which showed no trace of cholesteatoma or desquamation. See Politzer, Wien. med. Woch., 1891, No. 9.

as the true explanation for different cases, or as Kuhn[1] puts it: "Cholesteatoma of the temporal bone is either a true heteroplastic tumor, as Virchow believes it to be in all cases, or it may also develop, and perhaps in many cases, in the course of chronic suppuration of the middle ear, from epidermis which has grown into the tympanic spaces from the perforated drum or the external auditory canal, and which has slowly and continually kept shedding its horny layer, thus forming the stratified cholesteatomatous mass." To which I should add: or it may sometimes result from desquamation of the mucous membrane, which has become metamorphosed into epidermoid tissue (Wendt).

Concerning the *symptoms* and the diagnosis of this disease, little need be added to what is contained in the clinical histories narrated. In themselves the tumors are likely to cause few symptoms, as is seen in the case of Kuhn, and in Case III. (In the latter there was pain, but this was probably due to the purulent collection behind the growth which could not find an exit, and to ulceration of the dura mater.) They often tend to perpetuate an otorrhea or cause its recurrence.[2]

The *diagnosis* can be made when the masses are seen in the middle ear or auditory canal (Case II), or when smaller or larger flakes made up of the characteristic cells are washed out of the middle ear, especially when they are regularly lamellated (Case IV). There are unquestionably many cases of chronic otitis media in which there is slight desquamation of epidermoid cells, but in which cholesteatomata are never formed. Yet I believe that all cases in which such matter is found deserve special attention, and that they must be considered with suspicion when coming from the attic of the middle ear.

The *treatment* has been suggested by what has been said in the clinical histories. It consists in thoroughly and frequently cleaning the middle ear with injections of warm water, which may contain mercuric chlorid (1 : 5000), hydrogen dioxid, resorcin, carbolic acid, etc. The ordinary tip is rarely sufficient to force the steam into the recesses of the middle ear. Special canulas, which are narrow and long and curved at the tip (Hartmann's is one of the best), will enable the operator to reach these parts, even when the perforations of the drumhead are small. In case the opening is too contracted, it must be enlarged. (See Case IV.) When it is difficult to wash out the middle ear through the external auditory canal, we can sometimes succeed with injections into the Eustachian tube, as is recommended by Politzer and others. It is usually necessary to use the probe and the forceps, together with the injection of fluids. Polypi and carious bone must be removed. After the middle ear has been thoroughly cleaned, it is to be dried with cotton and by inflating air, and this is to be followed by the insufflation of powdered boric acid, iodoform, or a mixture of boric acid and salicylic acid (Siebenmann[1]), etc., or the instillation of alcoholic solutions of the same remedies. It is believed by some that we can thus alter the character of the lining membrane, and diminish or prevent the desquamation.

The operation of removing the ossicles has been recommended by Bezold, Stacke,[2] Kretschmann,[3] Kessel,[4] and others; but Politzer believes that this is indicated only in those cases in which "the greater part of the drumhead is destroyed, and there is only a minute portion remaining attached to the malleus, in which cases the malleus and the incus are of no service in hearing. Extraction of the malleus is indicated in only those cases of perforation of Shrapnell's membrane in which caries of the head of the bone has been determined by examination with the probe, or when hearing is greatly diminished. In those cases in which there is slight deafness (as is often the case in perforation of Shrapnell's membrane), extraction of the hammer is to be performed only under urgent circumstances and threatening symptoms, for there is a possible danger of injuring the hearing."[5]

The question of opening the mastoid process is still to be considered. When there is reason to believe that it is the seat of a cholesteatoma, it should be opened. It is difficult to determine this, unless there are local signs. When large quantities of cholesteatomatous matter are found in the discharge, and the process is sensitive to the touch or to pressure, or there is long-continued, deep-seated pain, we can make the diagnosis with much probability. Kretschmann[6] holds that the operation is indicated if the offensive odor of the discharge persists, after removal of the ossicles and irrigation of the attic.

It is important to remember that there is a great tendency for cholesteatomata or cholesteatomatous masses to recur. Patients are to be examined at intervals of a few months for a long time after there is apparent cure.

[1] Arch. of Otol., vol. xx, p. 303.

[2] The compact mass swells when placed into water. There are cases in which very acute and dangerous symptoms have arisen from getting water or steam in the ear and in contact with the cholesteatoma.

[1] Correspond.-blatt. f. Schweizer Aerzte, xxi, October; reviewed in American Journ. Med. Sciences, December, 1892.

[2] Tenth Internat. Med. Congr., Berlin.

[3] Arch. f. Ohrenheilk., xxv.

[4] Ibid., 1880, xvi.

[5] Politzer: Wiener med. Woch., Nov. 12, 1891, p. 518.

[6] Arch. f. Ohrenheilk, xxv, p. 165, reviewed in Arch. of Otol., xvii, p. 267.

THE TREATMENT OF THE INSANE OUTSIDE OF ASYLUMS.[1]

BY FREDERICK PETERSON, M.D.,
OF NEW YORK.

IT is only a short time since in Christendom the insane were believed to be cursed and possessed of devils. In some parts of heathendom, on the other hand, they were supposed to be blessed, in that their souls had been removed by God. Medieval treatment was founded upon that pathology. One portion of the world ducked, whipped, tortured, chained in dungeons, and occasionally burned the insane to death. Upon the whole, the heathen have treated their insane comparatively well.

After a time, many of the therapeutic measures employed by the Europeans of the Middle Ages were abandoned as unsatisfactory. But society still had to be protected; so the insane were fettered in the cells of jails and fortresses, and solitary towers, until a realizing sense of the inhumanity of such treatment struck a responsive chord somewhere in the breast of a Tuke, a Connolly, a Pinel, a Rush, a Kirkbride, an Earle, and doubtless other but unknown immortals, both before and after them. Thus, gradually insanity came to be regarded in the light of a disease, and, instead of prisons, special buildings were set apart for the particular custody of the insane. The great object of the asylums at first was to afford protection to society from lunatics, to protect them from themselves, and to provide for their care and support, when at public cost, in an economical manner. A hundred years ago, however, the asylum was still a species of jail, for its evolution had not yet proceeded far. Dungeons, and iron chains, and staples in stone walls and stone floors, were still in use in many places. Indeed, it is even less than eighty years ago since Norris, a patient in Bedlam (Bethlehem Hospital), in the great Christian city of London, was kept for twelve years in a cell with an iron collar riveted around his neck, and iron bands and rings around his waist, arms, and ankle, the neck being fastened to the wall, and the leg to a rude box of filthy straw.

The asylum having evolved so recently from the prison, it is not strange that it should in some places still possess rudimentary structural appendages and organs which are reminiscent of its embryonal stage; nor is it remarkable that a certain sense of disgrace or stigma has been popularly attached to confinement in an asylum. The people have still to be educated to the idea that insanity is a disease often requiring treatment of a particular nature in the special institutions built for the purpose, and that the asylum is rapidly becoming a pleasant refuge for the hopeless and a hospital for the curable cases of mental disorder.

It is a wise move to change the name "asylum" to "hospital," for it will aid in the diffusion among the people of a true conception of insanity, as now understood by medical men. But there are comparatively few, even in the profession, who are aware of the great improvements which have been made in asylums of late years; how the depressing barren halls and wards and naked floors have given place to pleasantly furnished and carpeted, cheerful-looking parlors, sitting-rooms, and bedrooms; how muffs and strait-jackets have disappeared; how the unintelligent attendant has in many instances given place to the trained nurse; how every new means of treatment is carried out in some places to the best of the ability of the asylum physicians; how schools, employment, theatricals, music, and out-of-door walks are provided in the place of the old deadly monotony, and, in fact, how the asylum has gradually undergone a metamorphosis, until its character has completely changed. There are, to be sure, not many perfectly ideal institutions as yet in existence, but there are some which approach very near to it, as, for instance, that at Alt-Scheritz near Leipzig, and the new asylum at Rome, both of which I visited and described in 1887.[1] These are, of course, constructed on the cottage and pavilion plan, so arranged as to impress one as small colonies or villages, with separate buildings for those merely there for custody because of dangerous propensities, those brought there to be cared for kindly during the remainder of their useless lives, those who carry on various occupations, and finally, for such as enter particularly to secure treatment for the brain-malady which has bereft them temporarily of their reason.

I will say that I believe improvement and reform are constantly going on in asylums throughout the world, that no one is more anxious than are their superintendents to make progress in the care and management of the insane. They are rapidly reaching the best methods of dealing with the insane poor. If any are tardy in this advance, it is because they are so often hampered by the never-ending over-crowding of our public asylums, by the interference of politics, by the lack of money, by the want of a sufficient number of medical assistants, and by a multiplicity of official duties.

While these statements are undoubtedly true, and great credit is due the asylum-physicians of the present day for their strenuous efforts in behalf of their charges, I believe that the *ideal* treatment of almost any insane person is to be sought outside of an asylum. After an asylum-experience of some years,

[1] Read before the N. Y. County Medical Society, Feb. 27, 1893.

[1] "Some European Asylums," Am. Journ. Insanity, July, 1887.

and an experience of many years, too, in private practice, I feel that I am in a position to judge fairly well of the relative merits of treatment in and out of asylums.

Theoretically, it ought to be the right of every individual in sickness to receive the best treatment that medical science affords; but this right can be enjoyed by very few. There are too many interfering conditions. Not every injured man is within reach of the best surgeon, not every fever-stricken one convenient to the best physician, and few are the deaf, the blind, the lame, those with crippled bodies, and those with disordered minds, who ever really receive the best treatment that the world can give. The intelligent doctor and the scientific skill are not the only requisites. Other conditions are good nursing, the most suitable climate, the best hygienic surroundings, the best moral atmosphere. In dealing with affections of the body solely, there is often much to be desired; but it is particularly in the treatment of those who are mentally as well as physically afflicted that so much which should be done is left undone. The obstacles in the way of securing the best treatment are multiplied in the case of the insane by the dethronement of the will, the reason, the judgment, and the emotions.

Just as a hospital is a better place than a tenement-house for a surgical patient, or a case of fever, so is the asylum superior to the home in the caretaking of the pauper and indigent lunatic. The acutely insane of the poorer classes are best treated at present in our large State institutions; and those of the moderately well-to-do, either at home or in the small private asylums. Only the insane of the wealthy classes can perhaps enjoy and carry out ideal methods of treatment, in their own homes, in country-houses, or in foreign travel.

It is, of course, needless to say that there are many degrees of insanity; that there are hundreds of cases that are never obliged to go to an asylum at all; that in society are many insane people carrying on legitimate occupations, and caring for themselves and families; and that, on the other hand, there are cases for which nothing but commitment to an asylum would be suitable or feasible. I have many insane people who visit me at my office, or at clinics, who are regularly following their vocations. Two very insane sisters are private patients of mine. I have described their condition in a paper on *folie à deux*.[1] One teaches music; the other is a book-agent. For twelve years they have been supporting themselves, and laying up money for a rainy day. Another case is in a night-watchman. Another has for years been switching hundreds of trains daily on a great railroad. Another is a young wife with a worthless husband, who cares for the household and supports her children. Another is a bookkeeper; another is a private secretary; another is a superintendent of a manufactory. Two or three are authors of noteworthy books, and support themselves by their valuable contributions to literature. They are all marked cases of chronic or subacute insanity of one form or another. Less noticeable cases at large in society are legion; so that it would be idle to dispute the fact that there are great numbers of insane persons who do not require to be put into custody. Indeed, we should not send any patient to an asylum, unless he needs restraint because of danger to himself or others, or because proper treatment and supervision are difficult in his home, owing generally to poverty or other insurmountable conditions. The sooner a case of acute insanity, occurring in a pauper or indigent, is removed to an asylum the better are his chances for recovery. With cases of acute insanity in those who are able to afford the expense of trained nurses at home, the case is different. It would seem unfortunate to have to send a patient to a large asylum, with its locks, its bars, its associations, its over-crowding, its commingling of the intelligent and the refined with the offspring of the slums, and its inevitable stigma, when the case may prove to be mild, with an early recovery. How much better to make the trial of treatment at home! Naturally, the responsibilities of the physician are often great with an insane patient in a private house, and it is certainly true that the asylum seemingly affords considerable protection from death by exhaustion, suicide, and the like. I say *seemingly*, for this protection is really not as efficient as is generally supposed. From the annual reports of the New York State Commission in Lunacy I gather that the number who die from exhaustion in the public asylums of the State of New York yearly is much over 150, and that the number of suicides of patients committed to their care is in the neighborhood of 15 per cent. These facts are noted merely to show that the asylum is not an absolute protection against the death of a patient by exhaustion from mental disease or suicide, and that in view of this we may treat many patients at home with a clear conscience, and with little greater risk, always providing that the room and the nurses and minor essentials are at our command.

I believe it is not fully appreciated how much the asylum-authorities are striving to do to effect improvement in the methods of management of the insane. Not only is the asylum itself undergoing a metamorphosis, but managers are actually doing all they can to extend the treatment of the insane *outside* of asylums. This is evident, for instance, from the fact of the opening of out-door departments or dispensaries in connection with some of

[1] "Paranoia in Two Sisters." Alienist and Neurologist, Jan., 1890.

them, thus enabling those suffering from mental disorders in the earliest stages, or of the milder types, to obtain skilled treatment without entering the asylum at all, without being deprived of their liberty and rights as citizens. This was first undertaken by the West Riding Asylum in 1889, and has been so successful that it was determined to extend the system to other English asylums (Menston and Wadsley). Not only this, but in Scotland and in some parts of our own country, they actually send their quieter patients from the asylums out to board on farms in the country instead of keeping them massed together in large buildings with their more disturbed brethren. Then, too, some of the large asylums of this country have successfully inaugurated agricultural colonies, several miles distant from the main building, where quiet patients are sent to live in cottages or pavilions "far from the madding crowd." (This plan has been very successful at Kalamazoo and elsewhere.)

In connection with this matter of the treatment of the insane poor, especially of the acute class, another feature was brought up by the author for consideration before the New York Neurological Society, in January, 1890, and in various editorials subsequently, viz.: the admission of the acutely insane to general hospitals. The proposition made was that a law should be passed that nothing in the lunacy statutes should be construed to interfere with the reception and treatment of acute cases of insanity in chartered general hospitals, in the same manner and under the same conditions as patients suffering from other diseases are there received and treated, provided that such hospitals have suitable accommodations, approved by the State Commission in Lunacy. Thus, any of the sixty-five or more chartered general hospitals of this State would be empowered to receive and treat such cases, if they so desired, and every town and city would in this manner be provided with one or several emergency wards for the acutely insane; and who can estimate how much good would thus be accomplished, not only to the particular patients admitted and treated, but to a vast number of other patients, by the training of the nurses, hospital internes, and attending physicians, in clinical psychiatry?

Some fourteen years ago the writer was resident physician in a general hospital with a hundred beds, in a large city. There was no asylum within 200 miles, consequently emergency cases of insanity were sent in from the city and its immediate vicinity to the general hospital for a temporary sojourn. If quiet, they were treated in private rooms; if disturbed, in a pavilion. They were not more difficult to handle, even at their worst, than the cases of delirium tremens that were frequently admitted. This, too, was a hospital not specially arranged for such cases. Those who are familiar with Vienna, Berlin, Strassburg, Bremen, Leipzig, and Paris, and other Continental cities, know that provision is made in many of their general hospitals for acute cases of insanity. Several years ago the Victoria General Hospital opened reception wards for the insane. In connection with the new clinic for mental diseases at Königsberg, a department for the insane was recently opened in the town hospital, so that now every Prussian university (except Kiel) has a clinic for diseases of the mind, in most cases connected with some general hospital.

Nor do we have to go out of our own country to find other instances of the insane occupying wards or pavilions in general hospitals. We have notable examples in Bellevue, in the Marshall Infirmary at Troy, and in the Philadelphia Hospital.[1]

There is the greater necessity for some such provision, as, unfortunately, in almost every town and city of this great Union, except New York City, the jail and the station-house at present serve in the capacity of reception-wards for the acutely insane. It will mark a great advance, therefore, in the treatment of the insane, when general hospitals open their doors and make special arrangements for the reception of acute cases, and their detention for a reasonable period of time, say a month or more, which would in many instances obviate the commitment to an asylum by process of law altogether.

In the largest cities there should be at the disposition of medical faculties a clinic of some kind for mental disorders. This want might, perhaps, be best met by the establishment of psychopathic hospitals on the plan of the psychiatric clinics in foreign universities, small hospitals receiving from fifty to one hundred cases of insanity, provided with laboratories for the study of the physiology and pathology of the central nervous system, ideally constructed in the midst of the city, and fully equipped for the best scientific treatment of patients, and the thorough instruction of students in the elements of psychiatry.

The lines of advance, then, in our care of the insane of the poorer classes outside of asylums are: (1) the opening of special reception-wards or pavilions in general hospitals; (2) the establishment of psychopathic hospitals in large cities; (3) the colonization and boarding-out of the quiet chronic inmates of asylums; (4) the creation of out-door departments in connection with asylums situated in densely populous districts.

When people are sufficiently well-to-do, the ideal

[1] In his last report of the Philadelphia Hospital, Dr. Hughes, the superintendent, speaks glowingly of the advantages to patients of the new system that had just been adopted, of receiving insane patients in special wards. He reports 50 per cent. of cases cured, commitment to an asylum having been unnecessary.

methods of treatment are, of course, to be found outside of an asylum. The insane of this class may be treated at home, or in a seashore cottage, in a country house, or they may go travelling in the charge of a physician and a nurse. The kind of treatment best adapted to the nature of the case must be decided by the physician. The quiet of a private house in the city or country is best for some cases, while the tonic and stimulus of foreign travel are indicated in others. It may be stated that when travel seems to be the prescription required, the greater the change from the environment in which the mental disorder developed, the better. The cities of Great Britain and the Continent do not differ essentially from our own cities, and patients should not be sent to such places with the idea of securing a change of environment. Norway in summer, and Egypt in winter, are regions which offer the greatest inducements in the way of tonics to the nervous system, and stimulus to the mind, and both are at the same time peculiarly restful and calmative.

If these methods of home, country house, or travel are for any reason impracticable, then the smallest private asylum that can be found is to be selected, for the fewer other insane people and the greater number of sane people the patient comes in contact with, the better will be his chances for recovery. There is a need for physicians in practice in the country who will be duly authorized and empowered by law to receive in their own homes and care for one such patient. The chief drawback in home-treatment, if long continued, is usually the bad effect of association with an insane person upon other members of his family, particularly if they be neuropathic. With a sufficiency of nurses and room, there is no contingency in the treatment of the insane that cannot be guarded against. These being provided, the worst features in a case, such as violence, homicidal and suicidal tendencies, attempts at self-mutilation, etc., may be as well avoided outside as inside of an asylum. There are cases in which, though I am opposed to mechanical restraint in great measure, I should employ long-sleeved night-gowns, or even camisoles, rather than let them go home before all means of cure had been tried at least for a few weeks' time.

The conditions and propensities that we have to combat are many. The choice of method must be the result of careful deliberation, and after judicial survey of all the features presented. We usually need the assistance of skilled and experienced nurses. Thanks to the asylum training-schools, there are numbers of such trained nurses of both sexes to be had in our large cities.

In acute cases, whether of mania or melancholia, it has been my experience that confinement to bed is a valuable factor in cure. Hence, on being called to such a case, I have the patient put to bed. Due precautions are taken as to the removal of all sharp instruments, weapons, drugs, cords, door-keys, and the like, and by a simple device the windows so arranged that they may not be opened beyond six inches; otherwise the furnishings may be left as they are without attention.

Insomnia and mental and motor excitement most frequently demand our best skill. In emergency, I am in the habit of using duboisine sulphate hypodermatically in the dose of one-hundredth of a grain, or sometimes hyoscyamine, or hyoscin hydrobromate in doses of from one-hundredth to one-sixtieth of a grain hypodermatically, though these latter are not as satisfactory as duboisine. But for routine treatment of insomnia and maniacal excitement I much prefer hydrotherapy to drugs. In some cases the prolonged warm bath (70°–90°) for from one-half to two hours may be used, but in all cases the hot wet-pack is applicable. For full details as to these procedures I would refer to my paper on "Hydrotherapy in the Treatment of Nervous and Mental Diseases."[1] Sometimes when the wet-pack does not suffice to quiet fierce maniacal excitement, I use duboisine in addition, or give doses by the mouth of paraldehyde or sulfonal, both of which are valuable hypnotics.

In acute depressed conditions, on the other hand, opiates usually act best in cases in which hydrotherapy does not subdue the insomnia, distress of mind, and disordered nervous system. Among opiates, codeine seems to offer advantages over others, and the contraction of a habit need not be feared. The refusal of food is another element of danger. Acute insanity, besides rest in bed, quiet and repose, needs overfeeding to balance the great waste of tissue going on in the system. While many cases of acute mania will eat and drink ravenously at times, from the nature of things their actions are uncertain, and the nurse should be instructed to feed the patient almost hourly and keep account of what is given. Milk, raw eggs, meat-juice, and occasional stimulants, must in extreme cases be our chief reliance. Having an intelligent and assiduous nurse at hand, the necessity of feeding with a tube will only rarely occur. When required, the soft rubber stomach-tube may be introduced by the physician through the mouth or nose, a funnel attached, and the liquid mixture of the substances named allowed to flow in. I cannot here refer to many other morbid conditions that must be met by appropriate medication, and by moral treatment as well in acute as in subacute and chronic forms of mental disorder. There are cases (some of the insanities of puberty

[1] American Journal Med. Sciences, February, 1893.

and adolescence, and other forms) in which anaphrodisiacs modify distinctly the trend of delusions. There are cases in which intestinal antiseptics achieve noteworthy results; indeed, the instances are few in which attention to morbid states of the alimentary canal is not rewarded by considerable benefit to the mental condition of the patient. Arguments with patients upon delusions more or less fixed in character, often has, despite the opinions of numerous alienists to the contrary, decided value in altering their beliefs, and at times even eradicating their insane ideas altogether. It is true that occasional argument is generally of no avail. Such moral treatment must be sedulously and perseveringly employed, daily and for weeks or months, to insure success. Argument is a species of suggestion.

In closing, I cannot but look forward to the time, which passing events foreshadow, when insanity will be recognized as a disease of the brain by the laity as well as by the medical profession; when more of those thus afflicted will be treated in their own homes, and still large numbers in psychopathic and general hospitals; to the time when our present large aggregations of the insane will be disseminated in farm-houses and colonies, and the huge structures now containing them be disintegrated into smaller buildings regularly distributed over large grounds on the community or village plan.

201 WEST FIFTY-FOURTH STREET.

PYLORIC OBSTRUCTION.[1]

BY H. TUHOLSKE, M.D.,

PROFESSOR OF SURGICAL PATHOLOGY AND CLINICAL SURGERY IN THE MISSOURI MEDICAL COLLEGE; CONSULTING SURGEON TO THE ST. LOUIS CITY HOSPITAL; SURGEON TO THE ST. LOUIS POLYCLINIC AND HOSPITAL, ETC.

IN order to discuss with any promise of success the treatment of pyloric obstruction, it would appear urgently indicated to pass in review its possible causes and our means and methods for an early diagnostic recognition. Like other important organs in the body, the stomach is becoming more and more the subject of a direct physical and chemical examination, and it is desirable that an exact recognition of its physical conditions should, as in other organs, be followed by successful direct treatment of a medicinal or surgical character.

The causes of pyloric obstruction are almost always of an intrinsic character; exceptionally only is the condition due to adhesions outside of the stomach, or to growths which from without mechanically press upon the pylorus, and rarely to acute flexions or twists.

The intrinsic causes are: contracting cicatrices of gastric ulcers, the rare submucous proliferation of the connective tissue interfering with its dilatability, and finally, the presence of a malignant growth.

As long as the examination of the tongue constituted the only or principal means of study of stomach diseases, a differential diagnosis was reached at so late a stage of the disease that surgical interference was out of court, or fatal.

Sooner or later all forms of pyloric obstruction give rise to dilatation of the stomach, vomiting at variable periods after food-ingestion, fermentation of stomach-contents, constipation, and emaciation.

The fact of the dilatation can be easily recognized by percussion, by the stomach-tube being felt through the parietes, and by filling of the stomach with gas or, preferably, water. Gastrectasia from atony of the gastric musculature, by its own history of chronicity, of gastric catarrh, of excessive eating and drinking, and of its great curability by lavage, is readily excluded, and the diagnosis of dilatation of obstruction arrived at.

Whether the two following tests constitute actual demonstrations of obstruction I am not able positively to assert, but they are surely corroborative and of value. Ewald recommends the giving fifteen grains of salol, which in the stomach remains inert. In the intestine, by the action of the alkaline juices, it splits up into carbolic and salicylic acids. The absence of salicylic acid in the urine would show that the salol had not passed the pylorus, provided the kidneys are acting normally. Another test is as follows: An ounce of oil introduced into the stomach, and recoverable some hours later by the siphon stomach-tube, would mean impassable obstruction of the pylorus.

Cicatricial obstruction brings the history of preceding ulceration, known by its dull, continuous pain and its paroxysmal increase upon taking food, its bleeding, by its occurrence in the comparatively young, in the chlorotic or anemic, and its gradual healing. In gastric ulcer, according to Riegel, the acid constituent of the gastric juice is greatly in excess; and in dilatation due to cicatricial obstruction, free hydrochloric acid will generally be demonstrable. The absence of free hydrochloric acid from the stomach in pyloric obstruction (the meal-tests of Leube and Ewald having been observed), demonstrated by the Günzburg phloroglucin-vanillin test, would be strong evidence of carcinoma ventriculi.

With advanced emaciation a pyloric tumor becomes discernible, and with it, generally, exceeding dilatation of the stomach and enormous displacement will be noticeable. In one case upon which I operated the pylorus was felt three inches below and to the right of the umbilicus; in another, also the subject of operation, the tumor presented in the

[1] Read before the St. Louis Surgical Society.

left, and was readily moved across to the right iliac region.

The modern methods of examination of the stomach, as taught by Leube, Einhorn, Günzburg, Riegel, Oser, and others, bring us nearer to an exact diagnosis of its diseases. In cases of legitimate doubt, an exploratory operation should be urged upon the patient.

Pyloric obstruction from any cause, if not relieved, leads to the death of the patient. No medicinal treatment is curative. A great deal may be accomplished for the relief of the patient's sufferings, and the prolongation of life. The most promising of all remedies is the emptying by washing of the stomach every second or third day, by means of the soft-rubber siphon stomach-tube; the patient's diet should be rigidly limited to food capable of being absorbed by the stomach, and, with its reduced digestive power, predigested food would appear indicated. The abstaining from stomach-feeding absolutely for a few days at regular recurrent intervals of three or four weeks, and the substitution during that time of rectal alimentation, will distinctly benefit the patient.

Pyloric stricture, however, is a surgical disease, and, as Senn tersely puts it, can be successfully dealt with only by surgical means. In a paper (THE MEDICAL NEWS, May 10, 1890, p. 503) on the subject of "Pylorectomy and Gastro-enterostomy for Pyloric Obstruction," I gave a fairly full account of the fact that the general consensus of opinion of surgeons was against the utility, and of some against the legitimacy of pylorectomy for malignant pyloric stricture.

To re-state the position, I will quote from my former paper:

"In Mr. Greig Smith's classical work on *Abdominal Surgery*, page 392, we read:

"With these results before us, we must admit that if pylorectomy is to be considered anything more than a mere 'surgical exercise,' it is to be contemplated only in a very carefully selected class of cases. If the patient is not in fairly good condition, if the stomach is greatly dilated, if the growth is large, fixed, and displaced, the operation should not be contemplated. And even when the opposite conditions are present, it is doubtful if it could ever be a surgeon's duty to advise the operation; he ought to undertake it only at the patient's urgent request, and after fully and honestly explaining to him the hazardous risk which he undergoes."

The inadequacy of the statistics on the subject may be readily appreciated by a reading of the section on the "Surgery of the Abdomen," by Mears, in the *Annual of the Universal Medical Sciences*, for 1889, page 25.

Professor Buchanan, with regard to the propriety of performing the operation in carcinoma, quotes the opinions of Butlin, and of Billroth, as given by his assistant, Salzer. The former says:

"The excessive mortality due to the operation; the rapidity of recurrence in what have appeared to be most favorable cases for operation; the return of the symptoms of obstruction in some, if not in many, of the cases, and the fact that there does not appear to be one case which can be claimed as a genuine cure, lead me to doubt whether the operation of resection of the pylorus for cancer is ever a justifiable operation."

Salzer states that "Billroth does not only consider the operation of resection of the stomach a justifiable one, but he continues operating with good results in many cases. Of course, he does not operate in cases of carcinoma, if there are already infiltrations and adhesions to the liver and pancreas. In these cases he prefers Woelfler's operation of gastro-enterostomy."

Statistics seem to show but little improvement since the foregoing was written, and I will now quote from Senn's admirable and hopeful paper, "On the Surgical Treatment of Pyloric Stenosis," published in October, 1891:

"At the Berlin International Medical Congress (1890), Billroth gave an account of twenty-seven pylorectomies, all of which were performed either by himself or his assistants. Of this number twelve recovered from the operation, and fifteen died. Of thirteen pylorectomies for carcinoma which survived the operation, five died after ten months, and one after five years and three months after the operation, from recurrence. There were yet living three women at the time the report was made, of whom two had been operated upon two and one-half and four and one-fourth months previously. Of six resections of the pylorus for cicatricial stenosis, three recovered."

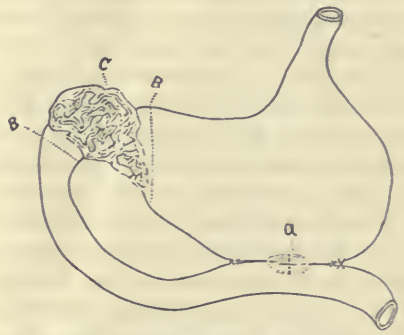
A careful study of most of the recorded cases makes apparent the fact that, almost always, operative procedures were resorted to in patients in an advanced stage of the disease, and in a condition of utter exhaustion. May we not hope for better results with an early diagnosis and an improved surgical technique? When the growth is still limited to the pylorus, and is perhaps of the annular kind, with no secondary involvements or adhesions to other viscera, and the patient is in fair condition, I believe the removal of the growth to be as legitimate and as surely indicated as that of malignant growths elsewhere. Pylorectomy, the Billroth operation, in the hands of its most able and skilled advocates, requires from two to three hours for its performance, and most patients so operated upon die in shock. An operation requiring less time, and fairly accomplishing the same end—that is, the radical removal of the growth—should have some claims for careful consideration. The operation referred to will be best understood in connection with the following case.

(An account of the operation, performed for the first time in March, 1890, was published in THE MEDICAL NEWS of May 10, 1890, and was followed by the publication of two cases by Bull, of New York.)

Mrs. B., fifty years of age, married, the mother of six children, German by birth, had suffered for some months with disease of the stomach, when she presented herself for treatment in March, 1891. She had lost considerable flesh, but was not extremely emaciated. She vomited large quantities of food every thirty-six or forty-eight hours, had no appetite, and was constipated. Physical examination revealed great dilatation of the stomach, and the pylorus movable in the left iliac fossa. A woman of exceptional nerve, she readily consented to an operation. I had proposed a gastro-enterostomy after Senn's method, and thought of following it in a few weeks by a pylorectomy. I made an incision over the tumor, which I had pushed to the median line, and found the pylorus free of adhesions. I then drew forward the stomach, found without much difficulty the jejunum, and placed both in easy apposition upon the parietes, with sponges packed underneath and warm aseptic towels around them. I selected a place four inches from the pylorus on the anterior surface of the stomach (that distance, in view of the later pylorectomy) and two inches above the omental attachment, made an incision an inch and a half in length through the coats of the stomach, introduced my finger into the cavity, examined the pylorus from within, and found it almost impermeable. I then made an incision of the same length into the free margin of the jejunum, and completed the operation by Senn's method, which needs no further description. The patient recovered nicely from the operation; vomiting persisted for three days, and then gradually ceased, and the patient commenced to improve in general health. Two weeks after the operation the patient contracted grippe-pneumonia, which made her very ill; nor did she recover from its effects for eight weeks. With her gradual improvement she became very urgent for the second operation, and insisted upon having that lump, which she could feel in her belly, removed. Three months after the gastro-enterostomy, with the patient in fair condition, I removed the pyloric tumor. A careful examination showed no extension of the disease. I separated the great omentum along the greater, and the gastro-hepatic omentum along the lesser curvature of the stomach, by cutting between ligatures introduced with the blunt needle. The ligature was cut at the loop, one thread drawn toward, the other from the stomach, until separated an inch from each other, when each was tied and the intervening omentum cut. A clamp was applied to the duodenum an inch from the growth, and another one to the stomach somewhat further away. The isolated tumor was now cut off with the scissors. I then closed both stomach and duodenum by interrupted sutures passing through all the coats, then invaginated each end, turning the ends in about one-half inch each, and closed by interrupted Lembert silk sutures. The patient made an uneventful recovery.

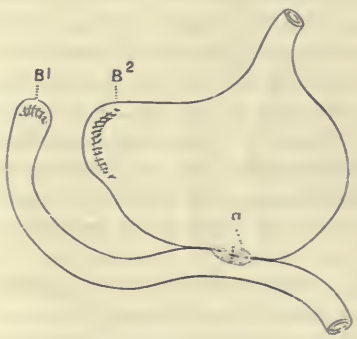
The accompanying cuts fairly illustrate the operation.

FIG. 1.



a. Anastomosis complete.
B, B. Lines of excision.
C. Malignant growth.

FIG. 2.



a. Anastomosis.
B^1. Closed end of duodenum.
B^2. Closed pyloric end of stomach.

The occurrence of more or less regurgitation of food during the first six days was somewhat disturbing. On the tenth day after the operation the patient sat up in bed and was photographed. She remained in the hospital for five weeks longer, and left because of the excessive heat. I heard nothing of her for some little time, when, in October following, my assistant, Dr. Perkins, was called to see the patient. She was having an attack of vomiting and purging, caused by some improper food; a baby and an older child in her family were similarly affected. They all died within forty-eight hours of the attack. Dr. Perkins with Mr. Deutsch, a senior student, secured a post-mortem examination, and I now possess the specimen of the stomach and bowel. There is nowhere visible a return of the disease, and a careful search in the abdomen revealed no glandular enlargement or other secondary involvement. The specimen, however, teaches a very important lesson. The opening between the stomach and bowel had grown very small, until there remained only a small fistula through which we could pass a lead-pencil.

Each of the operations did not occupy more than

thirty-five minutes, and might, with more practice, have been performed in less time.

I believe the operation by making a gastro-enterostomy, allowing the patient to be well nourished and strengthened, and following in about three weeks by pylorectomy—or, in other words, "in two stages"—will give the patient a better chance, and that in malignant growth of the pylorus, limited, recent, and without adhesions, we may secure encouraging results. The contraction of the gastro-enteric communication should be guarded against by much larger incisions, probably from two and a half to three inches long. The incision in the stomach should not be parallel with the greater curvature, but the anterior wall should be cut diagonally, so that the contracting muscular fibers shall pull in every direction from the opening. It may be that the cutting out of a narrow elliptical piece would meet the indication still better. In malignant growths of the pylorus, in an advanced state, with adhesions and secondary involvements, gastro-enterostomy after the method of Senn will afford the patient some prolongation of life and some comfort. If not postponed until too late, the operation should not be followed by a high rate of mortality.

In Greig Smith's, in Jacobson's, and in Treves's latest works the operation of curetting the pylorus has found a place. As an adjuvant to gastro-enterostomy some little benefit may be derived from it, although the increase of the danger of the operation would hardly warrant that procedure. It is not likely to find any followers.

Pylorectomy should never be performed for non-malignant obstruction, as better and less dangerous methods have been devised, and some of which seem to promise well. Digital dilatation of the pylorus after gastrotomy, according to Loretta, has been resorted to some forty times, with improvement, and some recoveries have been reported. The *cure* of the stricture by forcible dilatation seems to be an exceptional result not secured in any other organ. With a longer period of observation we shall probably learn of a good many relapses; nor is the danger of laceration of the peritoneum and of adhesions to be underrated. The coming operation for cicatricial pyloric obstruction seems to be the Heineke-Mikulicz pyloroplasty. It promises greater, if not complete and permanent restoration of functional capacity, without being apparently more dangerous than Loretta's digital dilatation. My knowledge of the operation being entirely theoretic, I take great pleasure in quoting Dr. Senn, who has twice performed pyloroplasty and with the best results:

"*Pyloroplasty.* The safest and functionally most efficient operation for cicatricial stenosis is the one devised by Heineke and Mikulicz nearly at the same time. It is a procedure which well deserves the name it bears, pyloroplasty, as it not only removes the mechanical obstruction, but, at the same time, creates a new pylorus. This operation was first planned and practised by Heineke, of Erlangen, and eleven months later Mikulicz, ignorant of Heineke's work, made the operation in exactly the same manner. The operation is made by cutting the anterior wall of the strictured pylorus and extending the incision about an inch toward the stomach, and the same distance in the direction of the duodenum. The straight incision in the long axis of the pylorus divides the stricture, and the contracted pylorus becomes the posterior wall of the new pylorus by retracting the margins of the wound on each side, at the center, with tenacula, and suturing the wound in an opposite direction to the incision—that is, transversely to the long axis of the stomach. The new pylorus is made up of tissue taken partly from the anterior wall of the stomach and partly from the duodenum, the posterior wall being composed of the narrow contracted pylorus. In suturing the wound it is advisable to tie the sutures from each angle of the wound, tying the central sutures last. Two rows of sutures, deep and superficial, are employed, the same as in closing a wound of the stomach or intestines. Recurrence of the stricture is a physical impossibility, as the new pylorus is composed mostly of healthy tissue, and the danger attending the operation is not greater than that which accompanies an ordinary intentional wound of the stomach or intestines. The results of this operation, obtained in eight cases which have so far been reported, have been very satisfactory, both in reference to the immediate effects of the operation and the functional results."

In reviewing our resources for the surgical treatment of pyloric obstruction I am forced to the conclusion that, for malignant stenosis, free from adhesions, free from secondary involvements, and of recent date, gastro-enterostomy by the method of Senn, followed by pylorectomy as described and carried out by me, to be the best operation, and it will remain so until a more rapid method of pylorectomy will have been devised. If the method of Maunsell, of New Zealand (*American Journ. Med. Sciences*, March, 1892), be found to sustain the claims of its author, there seems to be some hope in the near future of a further improved technique.

For malignant stenosis, with adhesions and secondary involvements, gastro-enterostomy alone seems to be most available.

For cicatricial or non-malignant stricture of the pylorus, the operation known as the Heineke-Mikulicz pyloroplasty contests successfully, I think, with Loretta's forcible dilatation.

In referring once more to my paper published in 1890, and containing the report of my first case, I find that I have stated the same conclusions, and later developments have not changed the position I then took.

A TOPICAL TREATMENT OF BRONCHITIS.[1]

BY EDWIN J. KUH, M.D.,
OF CHICAGO.

DURING the last two years I have employed a method in the treatment of acute and chronic bronchitis, which, in point of both rationality and success, seems superior to all other methods known to me.

The first suggestion was received through an article by William Murrell.[2] As early as 1874 Murrell wrote an article in the *Lancet* on "Ipecacuanha Spray in Winter Cough and Bronchitic Asthma." This paper was followed by various others describing the successful use of this treatment both in England and America. Intermediate to these articles Murrell published similar ones in the same line of observation. His method can briefly be described as follows: Ipecacuanha wine was diluted with twice its bulk of water; inhalations were practised by means of either a steam spray or a double-bulb atomizer; the latter was principally used. Patients were made to inhale for about one-half hour, and as much as four drams were used. As a rule from 100 to 260 compressions of the hand-bulb were required, 100 squeezes being equivalent to about one dram of the fluid. It immediately becomes apparent that this method is too awkward for extended use, although Dr. Murrell publishes very successful experiences with over 200 patients. The ipecacuanha spray, as he himself states, occasionally nauseates and augments the dyspnea in bronchitic asthma.

After prolonged trial I abandoned both the alcoholic and watery sprays and used only oily menstrua. Alcohol and water choke off the breath in the method which I am about to describe.

I apply direct inhalation from what is known as Davidson's atomizer No. 65, which is connected with an air-tank of about thirty pounds pressure. This atomizer emits a very fine and copious spray. The tip is introduced into the mouth in the same manner as in laryngeal and tracheal treatment. The patient is instructed to make as prolonged an expiration as possible, to pause for a moment, then to begin inhaling gently and slowly, and then more rapidly and deeply; during inspiration the spray is started slowly, and then with more or less force, the patient thereby drawing the vapor into his lungs. The successful result of this method depends upon the skill with which patients inhale. Not all persons are able to inhale correctly without more or less practice. The spray must be forced from the atomizer and be actively drawn down into the chest; a mere patency of the glottis is entirely insufficient; the method is a failure if this is not insisted upon. In correct inhalation you can see the spray drawn down into the chest, just as a strong draught will draw smoke into a chimney. If you see vapor suspended in the mouth and throat the inhalation is imperfect. The spray evidently forms a moist coating in the tubes, and but a very small quantity is again exhaled. Severe fits of coughing will expel small additional clouds of vapor, but almost all of it remains in the chest. This method of inhaling must be distinctly separated from the well-known ones from steam or vapor atomizers, of which latter most throat specialists are in possession in one form or another. The usual steam atomizers and vaporizers in use have a far more limited efficacy because they are milder applications.

The composition of the spray to be used can, of course, be varied according to the exigencies of the case or the preference of the physician. No spray, I believe, will be very effective without the presence of menthol. The formula which seems to have been most useful to me consists of: Menthol, from 1 to 2 per cent.; creasote, 1 per cent.; camphor, from ½ to 1 per cent.; oil of eucalyptus, 2 per cent.; oil of pine needles, 2 per cent. in albolene or benzoinol. The average quantity to be inhaled is two drams. Patients then begin to gag and the stomach revolts against more. These two drams are, in well-trained patients, absorbed in about eight or twelve inspirations.

The sensation of the spray extends over almost the entire anterior portion of the chest. It is described as either cooling or warming. Many patients feel the sensation extend to the diaphragmatic line. It causes some hot smarting in and above the larynx. I have never seen it cause laryngeal spasm when deeply inhaled. It does not seem at all unreasonable to assume that so vigorous a treatment, extending probably into the finest ramifications of the air-tract, and in a mild sense flooding them, might possibly injure. But this has never yet, in my experience in hundreds of treatments, been the case. It is possible to train intelligent children in this treatment. My youngest patient was three and a half years old.

The results are most striking in the severest cases of chronic bronchitis; the severer the case the more palpable the result. I refer principally to those cases with tenacious, thick, yellowish, or greenish bronchial discharge, with or without dyspnea. It is astonishing with what almost instantaneous success practically incurable patients with an old bronchitis complicated with emphysema, an anxious, sallow face, and wheezy respiration, will improve. The inhalation in these cases is generally (especially in the beginning of the treatment) followed by a succession of explosive coughs and a mouthful of hereto-

[1] Read before the Chicago Medical Society, Feb. 13, 1893.
[2] Wood's Medical and Surgical Monographs, August, 1890.

fore unremovable phlegm; the spray seems actually to scoop out the secretion in these cases. These patients, who found it impossible to rest in bed, will, within a week, enjoy comparatively peaceful sleep. From week to week a greater permeability of the smaller tubes can be noted by auscultation. The phlegm gradually loses its purulent character and becomes mucoid; it also decreases so much in quantity that even during the inhalation very little, or none, can be raised.

In the few cases of bronchitis complicating chronic nephritis and diabetes under my observation, the results were equally gratifying. We must consider the circulatory and other changes in these diseases as predisposing to bronchitic infections. The maximum results in chronic bronchitis are generally obtained within the first two weeks of treatment; after that the amelioration progresses at a slower pace, and finally reaches its maximum.

The only flaw which I have found in the treatment is that it will not cure a large proportion of cases of chronic bronchitis *completely;* there frequently remains an occasional cough, with or without a slight *non*-purulent discharge from the tubes. I have not yet found a method of making the cure in all successful cases complete. I should be grateful for any suggestion in this direction. The explanation why a perfect, ideal cure is exceptional is, from a pathologic standpoint, easy to explain. The hypertrophied bronchial mucous membrane will naturally remain hypertrophied, and manifest its condition by some sensitiveness and hypersecretion. My most unsuccessful cases of chronic bronchitis are those which are classified as *catarrhe sec;* on auscultation one hears, or does not hear, an occasional piping râle and harsh breathing, and the patient states that he raises no phlegm. These cases of chronic, dry, hacking bronchial cough, especially in elderly people, I have frequently found disappointing.

If an asthmatic has sufficient control over his respiration during an attack to inhale the spray the paroxysm can be aborted.

During the last two hay-fever seasons patients have regularly come for relief of their dyspnea, after having once tested the method. It is an excellent palliative in these cases.

I believe that the inhalation should be used in pertussis. In the light of newer research concerning the probable localization of the pertussis-infection the spray must also in this disease be forced below the trachea to be of any benefit.

In those cases of nasal asthma, with persistent bronchitis after the nasal treatment has been exhausted, it is a very useful, and frequently curative after-treatment.

To those who are not discouraged with all treatments in pulmonary tuberculosis I would suggest this method for the exhibition of creasote. In a 1 per cent. oily solution creasote is barely perceived; they could therefore use considerably stronger solutions.

In *acute* bronchitis, without fever, the effectiveness of the spray is so pronounced that those who have had experience with it resort to it at each onset of a bronchial disturbance. I am strongly tempted to the claim that it will abort acute bronchitis; but conscious of the liability to fallacious conclusions in a self-limited and naturally brief disease, I make it with all possible caution. If it does not abort every attack, it certainly alleviates all of them.

Do the chronic cases relapse? As I have been employing this treatment for only two years I cannot give a final answer. Those relapses which have come under my notice were discharged after a few treatments.

In chronic cases it is best to begin with daily inhalations for a few days, then on alternate days, then at intermissions of three, four or more days; then once a week will suffice, until a maximum result has been reached. In this manner it is possible to extend a minimal number of treatments over several months, which amount of time is required in the severer cases. I do not, as a rule, exhibit medicines during this treatment, as they are usually superfluous. When there is dyspnea associated with the trouble the potassium iodid should not be dispensed with. Codeine and the wine or syrup of tar seem to rank next in usefulness.

I can afford to prescribe these drugs now without jeopardizing the conclusions drawn from the effectiveness of the inhalation, because by former exclusively topical treatment I have learned how much to attribute to medicinal and how much to the topical treatment. I never use drugs in the beginning of the treatment, in order to get a clear result from the inhalations.

Murrell's publication of 1890 does not seem to have stimulated the profession, if I may judge by the lack of literature on the subject. I have seen no reference to anything like my modification of Murrell's treatment in the foreign and domestic journals at my command, nor do Schmidt's *Jahrbücher,* or Sajous's *Annual* refer to any such treatment.

Beverley Robinson, in his monograph on "Inhalers, Inhalations and Inhalants," in the *Physicians' Leisure Library,* describes the deep sprays with alcoholic and watery menstrua. He has justly deserted these as inefficient, and advocates vapor inhalations with the globe inhaler. This method seems useful, but is far slower and weaker in its result than the method I have described.

ORIGINAL LECTURE.

TALIPES VALGUS AND TALIPES CALCANEUS.

BY DE FOREST WILLARD, M.D.,
CLINICAL PROFESSOR OF ORTHOPEDIC SURGERY IN THE UNIVERSITY OF PENNSYLVANIA.

[Reported by DR. JAMES K. YOUNG.]

I HAVE to-day a number of interesting cases upon which I shall operate during the hour: a case of talipes valgus, which requires tenotomy of the tendo Achillis and of the peroneal tendons, together with forcible reduction of the deformity; and three cases of talipes calcaneus, which require shortening of the tendo Achillis. This latter operation is sometimes known as Willet's operation; but I do not like the plan of attaching a man's name to an operation, as it is not expressive and is confusing.

OPERATION FOR TALIPES VALGUS.

The first patient is a girl, ten years of age, who, when an infant, had an attack of infantile paralysis, which has left as a sequela a paralysis only of the muscles of the leg. At the time of the attack, which was accompanied with all of the usual symptoms of acute poliomyelitis, the entire limb was affected; but the condition has gradually regressed, until, as you see, the leg and foot only are involved. The foot is markedly everted, from the tension of the peroneal tendons, and when we attempt to flex the foot upon the leg it cannot be brought to a right angle. This condition is due, in a measure, to paralysis and to elongation of the opposing muscles; but it is also due to the changed relationship that exists between the foot and the leg by the growth of the bones and joints; the soft parts remaining, in consequence of the paralysis, more or less diminished in growth, while the direction in which the body-weight falls upon the foot in its deformed position is abnormal.

In many cases of valgus the error is made in deciding that equinus does not exist simply because the ball and sole of the foot can be brought upon the ground, and the angle of the foot, with the leg, seems to be a right angle. On closer inspection it will frequently be discovered that the tendo Achillis is really much too short, and that the apparently fair position is gained by an elongation of the plantar ligaments, producing a decided false position of the medio-tarsal articulation, and a tendency to flat-foot. Such a condition tends to grow steadily worse, and is only remediable by tenotomy of the tendo Achillis with forcible replacement.

To divide the tendo Achillis, the puncture should be made with a sharp-pointed tenotome, upon the inner side of the tendon, about one inch above its insertion. It is best to slightly retract the skin, so that the puncture of the skin and that of the sheath of the tendon will not correspond. The blunt-pointed tenotome should be inserted flatwise beneath the tendon, and pushed well across; the foot then being flexed strongly, the cutting edge is turned toward the tendon, and by a slight sawing or rocking motion the tendon is severed. As soon as the tendon is divided flexion of the foot is removed, and the tenotome, again turned flatwise, is withdrawn.

In dividing the peroneal tendons it is better to pass the knife between the skin and the tendons and cut directly down on them. This can readily be accomplished by making the puncture and inserting the probe-pointed tenotome just above the tendons, which are brought into prominence behind the external malleolus by strongly everting the foot.

A piece of lint soaked in a 1:1000 solution of mercuric chlorid is applied to the punctures, and secured in position by a dry gauze dressing, antiseptic cotton and antiseptic roller. The foot, after being forcibly reduced into an over-corrected position, is retained by means of a plaster-dressing.

[The parts having been previously prepared by a thorough scrubbing with soap, water, and mercurial solution 1:1000, and the patient etherized, tenotomy of the peroneal tendons and of the tendo Achillis was performed, after which the deformity was over-corrected by manual force. The foot was dressed antiseptically and retained in a plaster-dressing. This dressing will be retained for ten days or two weeks, when it will be removed and a walking-shoe applied. This consists of steel uprights attached to the shoe below, and to a band passing about the leg under the knee, with a joint opposite the ankle, which is so arranged that the foot can be freely flexed, but cannot be extended beyond a right angle. Upon the inner side of the ankle-joint will be placed an oval pad to prevent inversion of the foot. An elastic strap attached opposite the great toe will constantly exert an inverting power upon the foot, while the stirrup will be so adjusted in its relation to the shoe that the tendency will be to throw the foot upon the outer side.]

HELPLESS CRIPPLE—LIMBS USELESS—INFANTILE PARALYSIS.

The next patient is a child of four years, suffering from the effects of infantile paralysis, who has been brought to the clinic from the mountain regions of North Carolina. There is no hereditary history of nervous disease or of deformity. The child is bright and well nourished; but she is not able to walk at all or to creep. When placed upon the floor, she pulls herself along by her arms, dragging her paralyzed legs after her. She can bear her weight upon her left limb when placed upon it, but there is marked back-knee. The right hangs perfectly helpless. We must do all we can to put this little one upon her limbs and enable her to help herself. The first step will be to put her legs and feet into such position, mechanically, that she can use them. Fortunately, she has no contractures higher up than in the calf-muscles, and if the feet are brought into proper shape she can be placed upright upon a supporting apparatus, after which efforts at locomotion will daily bring additional strength to the enfeebled muscles, and in time she will walk with considerable facility. Any improvement will be better than her present helpless condition, even though it be but upon crutches.

I propose to cut the right tendo Achillis and forcibly correct the deformity, retaining the limb in a plaster cast, and, on the left side, to cut and shorten the tendo Achillis, and finally to reduce the varus deformity. The incision should be made vertically down upon the posterior surface of the tendon in such a manner as to secure the greatest exposure, so that the center of the incision shall be over the point of election. The

tendon will be divided about an inch above its insertion. The sheath must be cleanly divided, and the tendon gently removed from its bed by passing a grooved director beneath it. The tendon may then be divided by an oblique incision from above downward and from within outward.

The ends are then secured by hemostatic forceps, the cut surfaces being held in apposition. The ends are slid past each other for three-quarters of an inch, this being the amount of shortening required, and while they are held closely together the two sections are secured by fine chromicized catgut sutures, of which three will be sufficient. The ends that have been pinched must then be cut off, as they may undergo necrosis and prevent union if allowed to remain in the wound The parts must be thoroughly washed with a mercurial solution 1:1000, the incision closed with catgut or silkworm-gut sutures, and the parts protected by a full antiseptic dressing. The foot must be securely held by the hand of an assistant in an extended position until it is firmly fixed in the plaster-of-Paris dressing. The instep, as well as the malleoli and the surface of the wound, will be freely padded with cotton.

In three weeks the patient will be put upon a walking apparatus, which will consist of steel uprights extending from the shoes to a pelvic band about the waist. On the right side there will be a stop-joint, which will allow the foot to flex freely, but not to extend beyond a right angle; while an elastic strap, attached opposite the little toe to the outer upright, will constantly exert traction on the contracted tissue. At the left ankle there will be a stop-joint to allow the foot to extend, but not to flex beyond a right angle. A rubber artificial muscle will be attached to the heel of the shoe and pass to the leg-band below the knee. At the right knee there will be a lock-joint to fix the feeble knee, and on the left side a stop-joint to prevent the limb from being forced backward into a position of back-knee. With these operations, and with the apparatus that has been prescribed, and with massage, we hope to put the child upon her feet and permit her to walk.

TALIPES CALCANEUS AND CAVUS—INFANTILE PARALYSIS.

The next patient is a young woman, twenty-six years old; strong and robust. There is no history of tuberculosis. Her mother is living and well. Her father had paralysis five years before his death, but died of strangulated hernia. She has five brothers and three sisters living and in good health.

Her present trouble began at six years of age, during the summer. She had not been well for a day, and suddenly noticed a paralysis of the left limb. Her present condition shows considerable wasting of the left limb; the left calf measures 11½ inches, and right 14½ inches.

There is paralysis of the tibialis anticus, extensor longus digitorum, peronei, and gastrocnemius muscles, the foot being in a position of marked cavus.

In this case we will shorten the tendo Achillis by the same operation as was performed in the preceding case, but we will divide the tendon by a long longitudinal section, uniting the ends of this incision by a transverse incision passing from the central incision to the border of the tendon, then overlapping these cut ends a sufficient distance to correct the deformity, and suturing the cut surfaces securely together.

[The parts having been previously rendered aseptic, and the patient etherized, the tendon was exposed, as in the previous operation. With a sharp-pointed scalpel the tendon was split for a distance of two inches by a longitudinal incision from behind forward, extending through the entire thickness of the tendon. From the upper part of this incision the inner portion of the tendon was divided by a transverse incision passing inward, and from the lower part of this incision the outer portion of the tendon was divided by another transverse incision passing outward. The cut ends were overlapped for half an inch, and while the cut surfaces were held by forceps attached to the ends of the severed tendon the parts were secured by four chromicized sutures. The bruised ends of the tendon were cut off, the sutures cut short, the wound washed, closed, and dressed antiseptically, the foot being retained in an extended position by a plaster-of-Paris bandage. For the relief of the cavus the plantar fascia was freely divided, and strong force was applied upon the top of the instep to break down the exaggerated arch.]

The dressing will remain for three weeks, and then we will apply a walking-shoe. The shoe will have an insole or shank built in it to give it additional strength, for the attachment of the stirrup of the brace and for a depressing strap to act upon the cavus. The lateral steel uprights extend to just below the knee, and there will be a stop-joint at the ankle to permit full extension, but to limit flexion. Behind, an elastic strap will check flexion and tend to constantly extend the foot upon the leg, thus relieving the shortened tendon for a time until it has fully recovered. On the outer and inner ankle-joints there will be small rounds pads to maintain the foot in good position. With this apparatus the woman's condition, and appearance also, will be much improved.

INFANTILE PARALYSIS—TALIPES CALCANEO-VALGUS.

The next case is in a boy, nine years old, who has always been strong and hearty, and has never had any illness, except a mild attack of scarlatina. Both parents are living and well. The family history is negative.

The present deformity began at about one year of age before the boy began to walk. Of late it has grown rapidly worse.

On examination there is observed almost a posterior displacement of the astragalus, with great eversion of the sole of the foot. He walks more and more upon the scaphoid and upon the calcaneum. To permit of this there is a marked lengthening of the tendo Achillis. The foot is held in this everted position by the tension of the peroneal tendons, which, as the foot is inverted, are brought prominently into view. The tendo Achillis will be cut across obliquely and shortened one-third of an inch, and securely sutured with chromicized sutures, and the peroneal tendons will be divided through the same wound. There are no important vessels here, and the tenotome can be carried outward; this will avoid making an additional puncture. The foot will be dressed in the extended position, as in the preceding cases.

[The parts having been previously prepared, and the

patient etherized, the tendon was shortened in the same manner as in the second case. The wound was then washed with mercurial solution; the skin-wound was closed by means of interrupted catgut sutures, and the wound was dressed with aristol powder and covered with a full antiseptic dressing. The foot was then held in an inverted and extended position and fixed in a plaster-of-Paris dressing.]

After three weeks a walking-apparatus will be applied, similar to the one in the last case. To maintain the foot in its corrected position a pad will be placed opposite the inner ankle, and the shoe will be attached to the stirrup, so as to slope outward and to throw the foot upon its outer plantar surface, while an elastic strip fixed opposite to the great toe will continually lift the inner portion of the foot.

MEDICAL PROGRESS.

Two Symphysiotomies, one for the Extraction of a Decapitated and Imprisoned Head.—SCHWARZ (*Centralbl. f. Gynäkol.*, 1893, No. 5, p. 84) has reported the case of a tertipara, twenty-two years old, whose first child was delivered, dead, by means of forceps; the second child was also born still, version having been necessary. In the third labor version was practised in the hope of expediting a tardy delivery, but the head could not be born, either spontaneously by the contractions of the uterus or with the aid of forceps. Decapitation was performed, but the uterus became tetanically contracted and the head could not be removed. Considerable hemorrhage occurred from a wound in the lower segment of the uterus. As a further complication, an eclamptic attack took place. The pelvis was generally contracted. After the lapse of a considerable time symphysiotomy was decided upon. As soon as the section had been made the head, which was disproportionately large, was readily delivered by means of forceps. Three hours after the operation a second eclamptic attack occurred. During the puerperium the temperature was elevated; there was considerable offensive discharge; and the urine contained a small quantity of albumin. The wound had healed at the end of eight days. At the end of six weeks the woman was out of bed; at the end of eight weeks she could walk firmly.

The second case was in a woman, twenty-two years old, with a rhachitic pelvis. The child occupied a transverse position; the left arm had prolapsed; the uterus was tetanically contracted. Version was attempted, but could not be accomplished because of the prominence and depression of the sacral promonotory. Symphysiotomy was determined upon. The articular cartilage was found ossified, and a saw had to be employed in its division. The child had meanwhile died. In the mother parametritis and pelvic peritonitis developed, and she died on the eighth day of general peritonitis. After death it was found that the uterus was not profoundly involved, but that the fatal process had had its origin in a cellulitis consequent upon the difficulties and traumatisms of the operation.

Extirpation of the Gall-bladder.—At a meeting of the Medical Society of Greifswald, HELFERICH (*Deutsche medicin. Wochenschr.*, 1892, No. 45, p. 1020) presented a man, forty-two years old, whose gall-bladder had been extirpated. For three months there had been gastric derangement without jaundice. In the abdomen a tumor was detected corresponding in form, size, situation, and relations with the gall-bladder, and slightly movable with change in position. From the fact that the tumor could be made to disappear by distending the rectum with air, and from the pain induced by examination, it was concluded that there were numerous adhesions, and that the contents of the bladder were purulent. The abdomen was opened by an incision along the outer margin of the right rectus muscle, which was joined by another incision at right angles and directed toward the middle line. After the adhesions were broken up and precautions against contamination of the wound and the peritoneum were taken, the gall-bladder was opened and about half a pint of pus was evacuated, with some oil-globules and débris of calculi. A calculus almost as large as a cherry, wedged in the cystic duct, was removed with some difficulty. On account of the presence of pus and of the probability of ulceration of the cystic duct, and of marked changes in the walls of the gall-bladder, it was decided to perform cholecystectomy. The cystic duct was divided at a healthy point and its lumen closed by a Lembert suture. The bladder was then easily removed. The wound was carefully approximated, and no drainage was provided for. The subsequent course of the case was entirely afebrile. The patient made a speedy and perfect recovery.

Intra thoracic Goiter.—WIESMANN (*Corr.-bl. f. Schweizer Aerzte*, 1893, 1, p. 23) has reported the case of a man, fifty-six years old, of whom it could only be learned that he had suffered from dyspnea during his whole life. The head and the upper part of the body were bent forward. Breathing was stertorous and attended with the bruit of respiratory stenosis. The neck was extremely short. To the right of the larynx, but apparently not related to the dyspnea, was a hard nodule as large as a walnut. Heart and lungs presented no abnormality; but an area of dulness on percussion, extending, on either side of the sternum, from the clavicles to the level of the cardiac dulness, was demonstrable. The acute symptoms were relieved by the administration of large doses of potassium iodid and the application of an ice-bag to the chest. Subsequently, dysphagia was added to the clinical picture and the patient soon afterward died, exhausted. At the post-mortem examination, the anterior mediastinum was found occupied by an ovoid mass as large as two fists, extending from the level of the clavicles to that of the bifurcation of the trachea, upon which and upon the pericardium as well, the mass rested. The tumor was a partly cystic goiter. The mass to the right of the larynx proved to be a calcareous thyroid gland, which had no apparent parenchymatous connection with the intrathoracic goiter. The trachea was flattened and displaced upon the lateral aspect of the tumor to the right. The esophagus traversed the posterior aspect of the mass; it had also suffered some lateral displacement; its upper portion presented a diverticulum.

Two Rare Tumors of the Thigh.—BOEGEL (*Centralbl. f. Chirurgie*, 1892, No. 48, p. 1007) has reported the case

of a man, forty-three years old, who for two years had observed a progressive swelling upon the posterior aspect of the left thigh, with which for several months had been associated local pain, at times extending to the sole of the foot, and alternating with formication. On operation, a large, dense, ovoid tumor was found, occupying quite the lower half of the posterior aspect of the thigh, and separating the heads of the biceps and semi-tendinous muscles. The growth was connected with the sciatic nerve, the fibers of which coursed along its anterior surface. On microscopic examination the tumor was found to present the histologic appearances of a lymphangiectatic fibro-sarcoma. In the same person a second tumor, which proved to be a large lipoma, was removed from the upper part of the corresponding thigh. The mass was situated externally to the long head of the biceps, and was attached by its capsule to the tuber ischii. The man recovered without any unpleasant sequelæ. The second case was in a woman, thirty-five years old, who had accidentally discovered a tumor upon the posterior surface of the left thigh, which occasioned no special discomfort, but grew rapidly. The tumor was found to be as large as a child's head, and was attached to the fascia of the semi-tendinous muscle. On microscopic examination it proved to be a lymphangiectatic fibro-myxoma.

A Case Symphysiotomy.—KRASSOWSKY (*Centralbl. f. Gynäkologie*, 1893, No. 5, p. 81) has reported the case of a deutipara, twenty-three years old, with a contracted pelvis (the true conjugate meausuring 2.9 inches) and in labor at term. As the head remained movable above the pelvic inlet and failed to engage, and as in the first labor it had been necessary to practise craniotomy, it was now decided to perform symphysiotomy. The operation was attended with considerable hemorrhage from the cavernous body of the clitoris. During the application of the forceps the innominate bones separated for a distance of two and a half inches, and the right sacro-iliac articulation was heard to rupture. The child, a girl, weighed six and three-quarter pounds; the greater transverse diameter of the head measured 3.65 inches. The placenta followed the child in fifteen minutes. The puerperium was complicated by cystitis, a little febrile reaction, and some mental excitement. The patient sat up in the third week. On the twentieth day she stood up, but on account of weakness could walk but a few steps. A day later she was able to do better, although the gait was a little unsteady. There was slight mobility at the symphysis.

THERAPEUTIC NOTES.

Teucrin—A New Therapeutic Agent.—MOSETIG (*Internationale klin. Rundschau*, vii, 6, p. 214) has prepared from the plant teucrium scordium an extract to which he gives the name teucrin and that he has successfully employed by subcutaneous injection in the treatment of various mycotic affections. An infusion is prepared by means of hot distilled water from the dried and not too old plant; the expressed fluid is concentrated to the consistency of honey, repeatedly cleared with alcohol, finally evaporated to a specific gravity of 1.15 and introduced into sterilized vials which are hermetically sealed. The product is a dark-brown fluid, with a pungent, bitter taste, and miscible in all proportions with water. The dose is forty-five minims injected subcutaneously. The agent has been employed most largely in the treatment of tuberculosis of soft tissues. The injection is followed by constitutional symptoms that last perhaps for eight or ten hours. In from half an hour to four hours the temperature rises; occasionally there is a chill; in a few cases cutaneous eruptions appeared; in cases in which pulmonary tuberculosis also existed the sputum assumed a milky appearance. Breaking down took place at the site of local disease, with a throwing off or absorption of the disintegrated structures.

Hiccough Relieved by the Wet-pack.—CHAMBARD-HENON (*Rev. de Thér. méd.-chir.*, 1893, No. 3, p. 77) has reported the case of a man, thirty-four years old, in which, in the third week of an attack of scarlatina, incessant hiccough appeared, preventing sleep and interfering with the taking of food and drink. The urine was scanty, high-colored, but contained no albumin. The temperature ranged between 101° and 102°. After all other measures had been exhausted, it was concluded to apply peripheral stimulation, in the hope of overcoming spasm and establishing diuresis. Accordingly, the man was every three hours placed for five minutes in a wet-pack. After the third application the flow of urine increased and the hiccough subsided. In all, twenty-nine applications were made and the relief was permanent. The view is expressed that the hiccough was dependent upon an action upon the nervous system by the toxins of scarlatina, upon the elimination of which with the urine the symptoms disappeared.

Peculiar Toxic Symptoms from Antipyrin.—FREUDENBERG (*Centralb. f. klin. Medicin*, 1893, No. 5, p. 97) has reported the case of a man, thirty years old, in which following the ingestion of a single dose of seven and a half grains of antipyrin, a sense of burning in the urethra was perceived, and from which on pressure a drop of clear, thin fluid could be expressed. There was at the same time intense itching of the prepuce and scrotum, while the prepuce was swollen from edema. The urine was clear and contained no albumin. To confirm the accuracy of the observation the man was, at a later period, given a similar dose of antipyrin. Within an hour and a half itching appeared, and in five hours and a half prepuce and scrotum were swollen. No other parts of the body were affected, except perhaps the lower lip, which became somewhat reddened and swollen.

For Constipation Attended with Anemia.—

R.—Ext nuc. vom.	gr. ¼.
Ferri sulph. exsic.	gr. j.
Aloin.	gr. ¼.
Pulv. myrrhæ	gr. ss.
Pulv. ipecac.	gr. ss.
Ext. gentianæ.	gr. ij.—M.
Ft. pil. no. j.	

S.—To be taken at bedtime.

The Practitioner.

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SATURDAY, MARCH 11, 1893.

THE WHITE BLOOD-CORPUSCLES.

As early as 1845 VIRCHOW had noticed that in the leukocytosis attending certain diseases the small white corpuscles predominated, while in others the large forms prevailed, and he was able thus to divide leukemia into two varieties. Twenty years or more later the histologic characters of the blood were studied by MAX SCHULTZE, and his observation that the white cells of the blood presented "no morphologic unity" stimulated many to the closer study of them. Foremost among the investigators of the blood has been EHRLICH, of Berlin, and his happy application of the method of KOCH of preparing cover-glass specimens, by means of which the blood is studied in dried and stained preparations, has led to a vast widening of our knowledge of hemopathology.

EHRLICH'S descriptions of the "specific granulations" of the leukocytes, and his methods of differentiating them by micro-chemical reactions, are now so well known and readily accessible that we shall do no more than make passing reference to them here. It will be remembered that, according to EHRLICH, there are in normal blood five varieties of white corpuscles: 1. Lymphocytes, small elements the nuclei of which stain intensely in the triple stain, and about which there is only a small rim of protoplasmic substance. These cells are believed by EHRLICH to have their origin in the lymph-glands and lymphatic tissue of the body generally. 2. Large mononuclear elements, cells which contain a large oval or ovoid, feebly staining nucleus which is usually placed excentrically in the cell, the protoplasm being relatively well developed. 3. Leukocytes, with polymorphous nuclei, or the so-called "polynuclear leukocytes." These are larger than the lymphocytes, and smaller than the large mononuclear elements, and are characterized by the presence of S-, V-, Y-, Z-, or E-shaped nuclei, the protoplasm being thickly studded with fine granules, which stain intensely in neutral coloring mixtures, the ϵ-granulation, or neutrophilic granulation. 4. Transition forms between forms 2 and 3, in which the nucleus shows indentations and the protoplasm often a few neutrophilic granules. 5. Eosinophiles, cells varying in size and in the appearance of their nuclei, and the protoplasm of which contains large globular granules, which have a particular affinity for the acid dyes, and more especially for eosin.

In health these varieties are generally found to be present in fairly constant proportions, the lymphocytes forming from 15 to 30 per cent., the polynuclear neutrophiles from 60 to 75 per cent., the mononuclear and transition forms 6 per cent., and the eosinophiles from 2 to 4 per cent. of the whole number of the white corpuscles.

The determination of deviations from this normal relationship gives much more valuable information than a simple numerical estimate of the total number of all leukocytes present. Thus, in the acute exudative inflammations, accompanied by leukocytosis, the increase is chiefly in the polynuclear neutrophiles—not a matter of surprise when we recollect that these cells are the only ones known positively to leave the vessels in inflammation. It has been claimed that the polynuclear leukocyte owes its emigrative power to the high degree of ameboid movement which it possesses, but this is a point not yet settled. KANTHACK has only recently claimed to have demonstrated in experimental inflammations the emigration of small mononuclear leukocytes, but his observations, together with such theories as that of HANKIN, who believes that the defensive proteids of the blood-serum have their origin in certain of the leukocytic granulations, cannot be held to have been satisfactorily proved until a

sufficient number of control-investigations have confirmed them.

While the modern clinician appreciates the value of EHRLICH'S methods in the study of the diseases of the blood proper, and would not neglect to make use of them when dealing with a case of grave anemia or of leukemia, we fear that the importance of systematic blood-examinations in the ordinary infections and cachexias has heretofore been insufficiently recognized. To take a single example, it has long been known that in uncomplicated cases of typhoid fever there is in the blood no evidence of leukocytosis—that, indeed, the number of white corpuscles may go below the normal. But the differential count in stained specimens shows a marked alteration in the numbers of the individual varieties present, the large mononuclear elements being relatively increased, and the neutrophiles, with polymorphous nuclei, relatively diminished, while the number of lymphocytes remains essentially normal.

The appearance of a leukocytosis, or of a relative increase in the neutrophiles, would then in typhoid fever be strongly suggestive of an acute complicating inflammation elsewhere in the body—perhaps, for instance, in the lung or in the pleura. When, therefore, the physical signs are obscure, the color-analysis of the leukocytes might aid materially in the differential diagnosis.

But our special object in this article is to draw attention to a classification of the leukocytes more minute even than that of EHRLICH, although it is based upon and has been worked out by the methods employed by him. USKOW, of St. Petersburg, in 1890, in a monograph entitled *The Blood as a Tissue*, has studied the colorless corpuscles by means of contrast-stains with the greatest care and minuteness. His article appeared in the Russian language and so has been practically inaccessible to the majority of readers. A short reference to it appeared, indeed, in *Virchow's Archives*, but was so incomplete as to be of little service. We are pleased to find, in a lecture delivered by THAYER[1] before a section of the Massachusetts Medical Society, a complete account of USKOW'S investigations. The leukocytes are divided into: (1) Small lymphocytes, cells the size of a red corpuscle or smaller; (2) large lymphocytes in which the protoplasmic ring about the nucleus is a little larger and more irregular; (3) small, transparent corpuscles, cells about the size of the large lymphocytes, the nuclei of which stain more or less feebly, the protoplasm taking on no stain whatever; (4) large, transparent corpuscles, cells from three to five times the size of red corpuscles, in which the protoplasm takes on no stain; (5) giant, transparent corpuscles—the largest elements seen in the blood. Besides these there are corpuscles similar in size to these transparent forms, in which the protoplasm stains feebly, standing midway between that of the lymphocytes and that of the transparent corpuscles in its affinity for coloring matters. USKOW, therefore, includes in his classification: (6) Small transitional forms or giant lymphocytes; (7) large transitional forms, and (8) giant transitional forms. Finally, there are (9) the "multinuclear" neutrophilic leukocytes, of which he mentions three varieties, and (10) the eosinophilic leukocytes. USKOW concludes further from his experimental work on animals that the white corpuscles may be divided into (*a*) *young* elements, (*b*) *ripe* elements, and (*c*) *over-ripe* elements. Among the young elements he places the small transparent leukocytes, and the small and large lymphocytes; among the ripe forms, the small, large, and giant transitional leukocytes, and the large and giant transparent elements; the multinuclear neutrophiles and eosinophilic leukocytes are regarded as over-ripe forms, as they can be traced through various degenerative stages to their final dissolution.

Anyone who will take the trouble to examine his blood-slides stained with the EHRLICH-BIONDI mixture will easily convince himself of the accuracy of USKOW'S classification. However, as THAYER points out, in making differential counts in ordinary work, the adoption of this classification will lead to some difficulty, as the lines drawn between some of the forms will vary with different observers. To overcome this, certain modifications have been suggested by TSCHISTOWITCH and others. But for these we must refer our readers to THAYER'S article, in which will be found not only a careful account of technical methods, but also an interesting *résumé* of the most valuable of the recent contributions to our knowledge of the histologic characters of the blood in disease, including many interesting personal observations.

[1] Boston Medical and Surgical Journal, 1892, Nos. 7 and 8.

The Consumption of Alcohol in France was, in 1850, one liter sixty centiliters for each person; in 1870 the corresponding figures were two liters eighty-one centiliters; in 1885, three liters eighty-five centiliters.

EDITORIAL COMMENTS.

Deaths from Poisoning in England and Wales.—The *British Medical Journal*, January 28, 1893, p. 191, publishes an interesting summary of the cases of poisoning that occurred in England and Wales during the year 1891, based upon data contained in the annual report of the Registrar-General. The total number of deaths from poisoning during the year was 876, being 242 more than in 1889. Of this number, 544 cases were accidental, 327 were cases of suicide, and 5 were cases of homicide. Among those in the first group, 132 deaths were due to lead-poisoning; and 114 to narcotic poisoning by "opium, laudanum, morphine, chlorodyne, soothing syrup, paregoric." In 62 cases of accidental poisoning death was due to chloroform; in 31 to carbolic acid; in 19 to the poisonous alkaloids; in 17 to the mineral acids; in 8 to arsenic; in 7 to chloral; in 2 to oxalic acid. In 128 cases death was due to miscellaneous poisons. In 24 cases the nature of the poison was not clear. Among the cases of suicide, death was due to "opium, laudanum, morphine, chlorodyne, in 56 cases (17.1 per cent.)"; to carbolic acid in 63 (19 per cent.); to mineral acids in 28; to arsenic in but 6; to hydrocyanic acid or potassium cyanid in 36; to one or other of the potent alkaloids in 27 instances; to oxalic acid in 20 cases. Of the suicides, 178 were males and 149 females. Relatively to the total number of suicides by either sex, poison was much more frequently had recourse to by females. Taking both sexes together, death resulted from poisoning in one-eighth of the total number of suicides. Among the deaths by accident from all causes, poisoning figures in rather less than one-thirtieth, and twice as frequently among males as among females. Legislation cannot be too stringent in controlling the sale of recognized poisons and of substanes or medicines of which the composition is unknown.

Black Tongue is the descriptive name given to a condition characterized by the formation upon the dorsum of the tongue of a hair-like deposit that passes through various stages of coloration from yellow to brown and finally black, ultimately disappearing by desquamation as gradually as it came. Repeated recurrence is the rule. The manifestation is not known to be associated with any definite derangement of the general condition. The process is thought to be a result of irritation, resulting in undue proliferation of the epithelium, particularly of the filiform papillæ. The affection is rather a rare one, though, by a coincidence, we have seen half a dozen instances in the course of a year. In all of these the teeth presented a deposit of dense black pigment, such as is not uncommon in those that are negligent in the care of the teeth. A good description of the condition will be found in the *Transactions of the Pathological Society of Philadelphia*, vol. xiii, p. 70.[1] Morelli (*Compt. rend. hebdom. des Séances de la Soc. de Biologie*, s. 9, t. v, No. 1, p. 23), reports a case, with the results of a bacteriologic study. In a scraping from the tongue, among and within some of the epithelial cells, and by cultivation in artificial media, he succeeded in finding a bacillus, from 0 3 to 0.4 μ thick and from 2 to 4 μ long. Spores could not be demonstrated; nor could the condition be reproduced by inoculation. Attention is called to the fact that black tongue is habitual in parrots and in giraffes, and is occasionally present in cows and in goats. Morelli was unable, however, to demonstrate in the case of parrots the presence of a microbe corresponding with that found in the case of man.

[1] S. S. Cohen: Two Specimens of Melanotic Hypertrophy of the Filiform Papillæ of the Tongue (Black Tongue).

The Microbe of Beri-beri.—Beri-beri, or kak-ké, is practically unknown in this country, unless it be admitted that the cases recorded several years ago by J. J. Putnam[1] among some fishermen on the New England coast were instances of the affection. The disease is, however, at home in China, Japan, the East Indies, and Brazil, where it is endemic and occasionally epidemic. It appears in one of two forms, presenting either the symptoms of an acute infection, with febrile manifestations, anasarca, anemia, and frequently death, or more especially those of multiple neuritis, with motor, sensory, and trophic phenomena. As indicated, the clinical picture is suggestive of an infectious process, and biologic studies appear to have confirmed the accuracy of this assumption. Musso and Morelli (*Compt. rend. hebdom. des Séances de la Soc. de Biologie*, s. 9, t. v, No. 1, p. 18) report having succeeded in isolating by culture from the blood, the fluid effused into the serous cavities and subcutaneous tissues, the peripheral nerves, and the medulla in a number of cases of beri-beri in Brazil, micrococci that they believe to be identical with those already described by Lacerda, Ogata, and Eykmann as the specific cause of the disease. Inoculations of the organism were fatal to rabbits and guinea-pigs; dogs were more refractory. In the former apathy and paresis of the posterior extremities appeared, followed after a varying interval by death. After death, effusions into the serous cavities were found, together with the evidences of neuritis and the presence of organisms identical with those inoculated.

Diabetes of Pancreatic Origin.—Of the diseases of the pancreas even less is known than of its function. Recent investigations tend to show that in addition to its amylolytic, its proteolytic, and its fat-converting functions the pancreas possesses a glycolytic function. It had already been observed that in some cases of diabetes mellitus the pancreas presented degenerative changes, but it remained for recent investigators to establish incontrovertibly the relation between the disease of the gland and the clinical manifestations. It has been shown experimentally (and the evidence has been confirmed by clinical observation) that total destruction of the pancreas is essential for the development of this particular variety of diabetes—for it is well known that diabetes may also be caused by a lesion in the floor of the fourth ventricle.

Freyhan (*Berliner klin. Wochenschr.*, xxx, 6, p. 129) has reported two cases of diabetes in which, after death, the pancreatic duct was found to be occluded by calculi, while the gland itself was entirely disorganized and replaced by fibrous and fatty tissue.

To thus recognize that diabetes mellitus may be of diverse origin is in itself a distinct advance.

[1] Cited by Osler: Practice of Medicine, p. 780.

What therapeutic fruit this new knowledge will bear it is yet too early to realize. The administration of prepared pancreas to diabetics has thus far not been attended with especially encouraging results.

A New Preparation of the Thyroid Gland for the Treatment of Myxedema.—The remarkable results obtained in the treatment of myxedema by means of preparations of the thyroid gland have stimulated investigators to find some method of preparing a dry, stable preparation to replace the crude gland or the extracts that have been employed. Guided by a belief that the thyroid gland might contain some hitherto undescribed ferment White (*British Medical Journal*, No. 1676, p. 289) determined to try whether, by the formation of gelatinous or flocculent precipitates in liquid extracts known to possess the desired activity, the active principle could be separated from the large amount of proteid and other organic substances present. The glands were first exhausted with a mixture of equal parts of glycerin and water. The filtered fluid was acidulated with phosphoric acid, and calcium hydrate was added until an alkaline reaction was produced. The precipitate was filtered out as rapidly as possible, washed and dried over sulphuric acid without heat. Of the resulting powder the dose is three grains. Good results have attended its use.

The Woman's Medical Journal, "a monthly journal devoted to the interests of women physicians," is the name of the latest venture in medical journalism. This apparent exclusiveness of purpose is somewhat relaxed by an editorial assurance that the journal "will print news and notes of interest to the masculine as well as the feminine part of the profession." We had heretofore not been aware that women in medicine had professional interests apart from those common to all physicians. Surely woman in medicine has received fair and generous treatment and has proved herself abundantly capable to take care of herself without the necessity of special protection. The real *motif* of the venture may, however, be concealed in the concluding words of the salutatory, which "expresses appreciation of the advertisers who appear in our advertising pages, and trust that each reader will see something which she desires, and send for it at once."

Gynecology Among the Insane.—With a reckless haste and publicity not altogether above suspicion of some unworthy political influence, the Pennsylvania State Board of Public Charities condemned the use of surgical methods of relief among the inmates of the female department of the State Asylum at Norristown. The public has thus become more certain than ever of the justice of its horror of the imagined abuses practised by the profession upon the defenceless insane and sick. The Board of Trustees of the Asylum, and Dr. Bennett, in reply to the State Board of Charities, have more than met all the charges, and have clearly shown that the question of sanity or insanity has not been considered in the removal of the diseased organs of the six cases complained of. If nothing else is immortal, the bitter suspicion and deep-seated grudge against the medical profession seems destined never to die.

The New Immigration Law enacted last week and signed by President Harrison underwent the usual crippling process in order that some law on the subject might be passed and that some restriction might be made obligatory. Masters of vessels and surgeons at the sailing ports are required to make affidavit before our consuls as to the emigrant's condition, physical, educational, fiscal, moral, etc., as to his purposes, destination, and whether his passage has been paid for him or not. Upon arrival at our ports special inquiry shall again be instituted by the U. S. officials as to the immigrant's fitness to land. While all these provisions are excellent, they are not so thorough-going as the circumstances would seem to warrant. The power of the local inspectors of immigration is, as it should be, curtailed and the General Government assumes control of the matter.

Regulations at Foreign Ports to Prevent Cholera—Surgeon-General Wyman has issued regulations to prevent the emigration from foreign ports of those infected with cholera or other epidemic disease. Cabin passengers must show proof of their places of residence for four days prior to their embarcation, and if they have been exposed to contagious disease they will be detained, their baggage disinfected, etc. Steerage passengers from an infected port are to be detained five days under medical observation, with disinfection, regulations as to cleanliness, etc. If cholera breaks out among them, all are detained until seven days after the last case has recovered.

The Right to Establish Hospitals for Infectious Diseases.—The British Court of Appeals has decided that a local authority has no power to forbid the erection of a hospital within its district by another local authority, whether the hospital be for infectious diseases or not. The city of Manchester thus has power to establish a small-pox hospital on ground it owns in the adjacent town of Withington, despite the opposition of the people of Withington.

The Samuel D. Gross Monument Fund.—The amounts so far subscribed aggregate nearly ten thousand dollars, of which about five thousand have been secured in Philadelphia. Four thousand dollars are still needed to complete the desired amount. Dr. J. B. Chapin is chairman and treasurer of the committee, to whom subscriptions may be forwarded, or to Mr. George Keil, 1715 Willington Sreet, Philadelphia.

Norse Mythology and Cod-liver Oil.—Many of our readers will doubtless have received, and wondered as they read, what possible connection a treatise on *Norse Mythology, the Religion of our Forefathers*, by an LL.D., can have with cod-liver oil. The two subjects are brought together in a strange and illogical copartnership in a pamphlet before us, most noteworthy as a literary and advertising curiosity.

It Does Not Often Happen, because patients are not often so generous, nor practioners so scrupulous, that a physician returns a check for $500 voluntarily tendered, on the ground that the medical service rendered had not been worth so much money. This incident, pleasant to chronicle, happened last week in Philadelphia.

CORRESPONDENCE.

THE PHYSICIAN AND THE PHARMACIST.

To the Editor of THE MEDICAL NEWS,

SIR: In an editorial in a late issue of THE MEDICAL NEWS (February 18, 1893, p. 194), it is said that "the study of pharmacy does not include all the knowledge necessary for the practice of medicine, but the study of medicine does include all the knowledge necessary for the practice of pharmacy, in so far as the protection of the public against danger of mistake is concerned." While holding the opinions of THE MEDICAL NEWS in the greatest respect, yet I feel that they are sometimes wrong, especially when touching upon the subject of pharmacy, and from the views quoted I most positively dissent. Can you sincerely say that you believe a medical graduate, without other training, to be a competent prescriptionist? Would you risk your prescriptions in the hands of such a man? Is there also no other element than danger of mistake to be considered? What of the identity of the various drugs and chemicals that appear upon the market—the ability to distinguish medicinal plants and parts of plants and their products from each other, and from sophistication and impurities, and the best methods of combining leading remedies?

The province of the pharmacist is to preserve drugs that they retain their peculiar properties; to prepare them for use in the best possible manner, as well as to dispense them. This cannot be taught in a few hours. If you will look into the subject you will find that our medical colleges devote to the study of pharmacy from naught to forty-six hours' time of the entire term necessary to the degree. The largest number of hours that I can find is 46; another is 23, another 10, and the announcements of other colleges do not mention pharmacy at all. This, against the 1500 hours of the New York and Philadelphia colleges of pharmacy, and about that amount in the colleges of other cities.

Do you not look upon medicine as a tool with which you are to work—the medium by which you are to produce certain physiologic effects? When you prescribe strychnine you want the physiologic effect of strychnine; you want this as well as to guard against the danger of mistake. If the medical graduate desires to place himself before the public as competent to prepare and dispense medicines, why should he not prove to the public his abilities to do so by a certificate from an examining board? If a pharmacist, who has had at least four years' apprenticeship in pharmacy, who has attended two full courses of lectures and passed an examination in these branches, must appear before such a board, why should not the medical graduate, who has received but a few hours' instruction?

Again, I venture to say that if our physicians received a preparatory course at a college of pharmacy—were this encouraged by our medical colleges rather than to be discouraged, as it is to-day—there would be far greater ability in the profession in the treatment of disease. The subject is distinctive—medical colleges cannot handle it. It is a specialty, and even more of a specialty to medicine than dentistry is to surgery. To say the least, proprietary articles would receive a great blow, for their greatest indorsement to-day is by physicians. A very bright practitioner—a graduate of one of our best universities—recently told me that he had seen but once a copy of the Pharmacopeia and never a National Formulary. He was astonished to learn that lactopeptine was a proprietary article. I would really like to know how many active physicians in the land possess a copy of the last Pharmacopeia. A very small proportion, I imagine; and that number, no doubt, had a previous pharmaceutical training, and can appreciate the value of the U. S. P.

A pharmacist who makes an effort to be truly and legitimately a pharmacist; who makes and prides himself upon fine pharmacopeial preparations, cannot live by his knowledge and labor, because physicians do not support him. He must devote a large portion of his prescription department to opened bottles of So-and-so's elixir, or other quack preparations prescribed by the profession.

Respectfully yours,

M. S. SIMPSON, M.D.

PLAINFIELD, N. J.

[Our esteemed correspondent is both right and wrong. He is right in maintaining that greater attention should be paid to practical pharmacy in medical education; but he is wrong in assuming that the number of hours devoted to this at college represents the entire knowledge and experience of even a large minority of physicians. He is right in condemning the sale of nostrums by druggists and the use of nostrums by physicians; but he is wrong in assuming that physicians in general use nostrums or approve of their sale. THE MEDICAL NEWS has expressed itself fully on this question. The one reason why pharmacists cannot subsist on prescription business alone, and hence believe themselves forced to sell nostrums is that there are more stores in a given neighborhood than necessity demands. The medical profession does cordially support every man who tries to do legitimate pharmacy only. At least one notable example is to be found in Philadelphia. Few druggists nowadays prepare the galenical preparations they dispense, and still fewer adhere to the U. S. P. as closely as they should. We know of more than one instance in which a prescription for an infusion has been filled by diluting with water a purchased fluid extract. We believe that a physician practising pharmacy would be more scrupulous as to the efficiency and purity of his stock than are many pharmacists. He would also be less likely to do "counter-prescribing," for he would realize its dangers more keenly. Further, we hold—and this is the only point of real moment—that the sole justification for restrictive legislation must be that it is necessary for the public safety. On that broad ground we can uphold the present law of Pennsylvania concerning the practice of pharmacy; but we cannot approve of the proposition to repeal Section 11.—ED. NEWS.]

EPILEPSY OR ANGINA PECTORIS?

To the Editor of THE MEDICAL NEWS,

SIR: On the night of August 1, 1892, a man was roused from sleep by a "killing" pain in the region of the heart. There was also dyspnea, so marked as to make utterance difficult, and the heart's action was peculiar in that it was first very rapid and then very slow—so slow, indeed, that the man feared it would soon

stop. The seizure lasted longer than an hour. There was no loss of consciousness. The tongue or lips were not bitten; no frothing was observed. The man did not fall or cry. The pain was limited to an area of twelve inches in diameter, having the heart for its center. Relief was sought in posture, in heat, in opium; but found in none.

The seizure, as described, was repeated every night from August 1st to December 16th, and at the same hour, viz., from 12.30 to 1.30, unless the man remained awake, out of bed. In the morning he insisted that he was as well as ever. During the day no alteration of the respiratory sounds was found, and the heart gave no indication of any fault of structure or function. The man could run or mount stairs without exciting dyspnea and without increasing the rapidity of the heart's action except in a slight degree.

There is no recollection of any injury to the head; no history of specific infection or inheritance. The man is a large, strong, ruddy-faced farmer of thirty-five, and, so far as he knows, no near relative is or has been the subject of chorea, epilepsy, or obstinate neuralgia.

Great apprehension was felt during the first weeks of the invasion—apprehension of immediate death; but time allayed this concern, after prolonged experience, though it did nothing to assuage the severity of the pain.

I am unable to learn what measures were employed by his medical advisers for his relief, but am informed that all were ineffectual; that no interruption or relief of the paroxysm was accomplished.

Consideration of the case compelled the belief that the affection was essentially a neurosis. The regular recurrence, the lack of evidence of the existence of any structural lesion in the interval between attacks, were suggestive of the group of cases described so well by Trousseau as instances of epileptiform neuralgia, though there was in this patient's manner nothing indicative of the nervous organization that ordinarily manifests itself by quick replies, alertness of movement, the mastery of the emotions, and a certain grotesqueness of behavior that is easy to discern but difficult to describe. He was, on the contrary, self-possessed, unimaginative, and had himself in good control, and was rather stolid and impassive. It ought to be added that prior to this seizure, on August 1st, he never experienced any convulsive movement, never had a moment's loss of consciousness, except during sleep, never had even an attack of migraine.

The treatment seems to me to settle any doubt as to the character of the affection. The bromides, in heavy doses, mainly at bedtime, interrupted the paroxysms, and to this date there has been no indication of their return. It should be added that the duration of the paroxysms was not infrequently prolonged to three hours, and was never less than an hour, and that the distress was extreme. The pain was sometimes declared to be greater in the epigastrium, again in the precordium, and again under the clavicles. Tingling and numbness in the arms and a sense of suffocation were described as severe, but no râles or rhonchi were heard during or after the paroxysm. There was no tendency to stupor or drowsiness upon the cessation of the seizure. The statement relating to the dyspnea may suggest a kinship with paroxysmal asthma, idiopathic asthma, but the kinship was no nearer to asthma than to angina, and measures employed against it by the family, such as stramonium, were of no avail; nor does exposure to dust, or, indeed, to any irritant, excite asthmatic attacks. He never had an attack of asthma in his life, unless these seizures were asthmatic. The most notable feature of this case, and one which marks it as anomalous, was its recurrence at a fixed hour, and the fact that it was averted by vigilance. It may be urged that this seems farcical; that a successful attempt to delude has been accomplished by the player-patient. It is scarcely necessary to say that the play was a long and expensive one, and that the cost and suffering were in one person and in one purse.

Respectfully,

J. N. RANDALL, M.D.

DECATUR, ILL., January 26, 1893.

PHYSICIANS AS PHARMACISTS.

To the Editor of THE MEDICAL NEWS,

SIR: In reference to your editorial comment in THE MEDICAL NEWS of February 18th, I feel that I must protest when you say that "The study of medicine does include all the knowledge necessary for the practice of pharmacy, in so far as the protection of the public against danger of mistake is concerned." There are many reasons why your statement is based on unsound reasoning. I will mention but two of them.

1. The physician studies only the remedies which he expects to use in his practice. Few physicians will study or prescribe over one hundred different remedies in a lifetime. The pharmacist's prescription-file will verify this assertion.

The pharmacist must compound and sell hundreds, if not thousands of remedies. His study must include the medicines employed by the regular, eclectic, or homeopathic practitioner, herb doctor, midwife, etc., as well as all domestic remedies. How many physicians have even heard of all the remedies in the Pharmacopeia, much less those of the National Formulary and other pharmaceutical works.

2. The physician does not gain a pharmaceutical knowledge of even the few remedies he prescribes. It is not "manipulative skill" that he lacks, but actual knowledge, which the pharmacist gains by hard study from his works on pharmacognosy and pharmacy.

Very truly yours,

H. M. WHELPLEY, Ph.G., M.D.

ST. LOUIS, MO.

REVIEWS.

A MANUAL OF CHEMISTRY. FOR THE USE OF STUDENTS OF MEDICINE. By ARTHUR P. LUFF, M.D., B.Sc., Lecturer on Medical Jurisprudence and Toxicological Chemistry, St. Mary's Hospital Medical School, London. With 36 engravings. 12mo, pp. 522. Philadelphia: Lea Brothers & Co., 1892.

THE design of this book is to present to the medical student the fundamental principles of chemistry and such detailed facts as he most needs to know in the study and practice of medicine. Upon the whole, the design is well carried out. The language is terse, the style clear, the statements, as a rule, accurate. In the section on organic chemistry there is too much condensation, and

a few additional pages might advantageously be devoted to a preliminary and detailed explication of the theories of structure. Compounds of physiologic or pathologic occurrence in the human organism should not only be mentioned in chemical sequence, but a separate chapter should be devoted to further comment upon them in medical sequence. A few slips are to be noted; for instance, the phrase "trypsin, the ferment contained in the pancreatic juice," might lead the student to infer that the pancreatic juice contained no other ferment. The word gun-cotton, employed in the formula for the manufacture of gun-cotton, is evidently a typographic error. The statement that strontium salts are not of any medical importance is not up to date. The tests for acetone are omitted; and the only sugar-test we found is that with alkaline copper solutions. Fehling's solution is specifically mentioned, but its exact composition is not given. On the other hand, much useful information, not to be found elsewhere without much search amid matter of no value to physicians, is here gathered and set in order. A second edition will doubtless soon be called for, in which minor defects, such as those we have pointed out, may be corrected. We cordially commend the book to medical readers, practitioners as well as students.

The Diseases of the Stomach. By Dr. C. A. Ewald, Extraordinary Professor of Medicine at the University of Berlin; Director of the Augusta Hospital, etc. Authorized translation from the second German edition (with special additions by the author), by Morris Manges, M.D., Attending Physician to Out-patient Department Mt. Sinai Hospital, New York City. With thirty illustrations. 8vo, pp. xii, 497. New York: D. Appleton & Co., 1892.

The author of this book occupies a foremost place among those who have adopted the modern methods of study of disorders of the digestive apparatus, and his lectures may be accepted as an authoritative exposition of the present status of the subject. The translator has done his work well; the smoothness and clearness of the language being in marked contrast with many translations from the German.

Ewald rightly insists that one cannot be a "stomach specialist." The physician who devotes special attention and study to the diagnosis and treatment of disorders of digestion and diseases of the digestive apparatus must have large experience and broad views, or he will fail to appreciate the information gained by his special investigations; while the technique is so simple that anyone should be able to acquire it.

Among the more important practical points is the statement that peptonization is unnecessary in rectal alimentation; that there is no absolute standard for the size of the normal stomach, and hence functional signs must be largely depended upon in the diagnosis of dilatation, *megagastria* being thus discriminated from *gastrectasia;* that chronic gastric ulceration must be recognized as among the conditions favoring the development of carcinoma, especially in young persons, and that the presence of carcinoma cannot be held to be demonstrated by the absence of free hydrochloric acid from the gastric secretions, unless careful observations, extending over a prolonged period, during which a suitable therapy has been employed, are of uniform result. Equally erroneous is it to exclude carcinoma because free hydrochloric acid is found, as, with localized neoplasm and intact mucous membrane, the secretion of this acid may continue until shortly before death. Ewald believes it to be impossible to diagnosticate carcinoma from isolated epithelial cells found in the vomit. He states that even cancer-nests may be closely simulated by detached fragments of the mucosa. The volume is rich in such facts as these, and will repay careful study.

Transactions of the Association of American Physicians for the Year 1892. Vol. VIII. 8vo, pp. xix, 355. Philadelphia: Wm. J. Dornan.

The *Transactions* of this society are necessarily of an interesting and instructive nature—composed as they are of papers read by representative men of the profession in America.

Owing to the limited space at our command, we must be content with a cursory mention of a few facts gleaned from some of the papers that deal with vital questions of the day.

Dr. George Wilkins, of Montreal, Canada, expresses a strong advocacy of the treatment of typhoid fever by cold baths. His favorable views of the Brand method of treating typhoid fever were concurred in by Drs. William Osler, William Pepper, and Charles G. Stockton, in the discussion that followed the reading of the paper. Dr. James Tyson, in the same discussion, referred to two fatal cases treated by this method. In one case death resulted from embolic pneumonia, and in the other from peritonitis succeeding perforation.

Mere mention can only be made of the interesting and instructive paper of Dr. Geo. M. Sternberg, U. S. A., entitled "Practical Results of Bacteriological Researches." It must be read to be appreciated.

In a paper on "The Treatment of Acute Dysentery by Antiseptic Rectal and Colon Irrigation," Dr. W. W. Johnston, of Washington, D. C., concludes that boric acid and carbolic acid are the best antiseptics to use, preference being given to the drug first named.

One of the most instructive papers presented in this volume is that by Dr. Charles G. Stockton, of Buffalo, N. Y., entitled "Misconceptions and Misnomers Revealed by Modern Gastric Research." It is rendered especially so from the fact that four-fifths of Americans suffer from gastric derangement of one sort or another, and any article tending to correct errors in the diagnosis of affections of the stomach or to systematize the nomenclature of its diseases is more than welcome.

"Tube-Casts and Their Diagnostic Value," by Dr. I. N. Danforth, of Chicago, Ill., is a paper that will more than repay the reader for time spent in its perusal.

Finger-prints. By Francis Galton. 8vo, pp. 216. London and New York: Macmillan & Co., 1892.

Although investigated as far back as 1823 by Purkinje, the lines of the palmar surfaces have never before been systematically analyzed. Galton finds that the ridges of the balls of the digits may be reduced to three typical arrangements: "Arches, loops, whorls." These patterns are subject to wide variation as regards

their cores and the individual ridges to infinite minute differences. Throughout life these lines remain unaltered to the smallest detail, and the imprints of the ten fingers thus furnish a distinctive combination for purposes of identification, compared with which the French system of measuring criminals, called *Bertillonage*, falls far short. The "A. L. W." system of classification admits of a simple system of indexing, by means of which any recorded print may be found among thousands, with the same ease as a book in the card catalogue of a library. The inheritance of peculiar patterns is demonstrated and a preponderance of maternal influence is shown in the hereditary transmission of finger-patterns. From the data thus far obtained, the races of mankind do not appear to be characterized by peculiar patterns, although the percentage of arches in the English and the Hebrews differs in the ratio of 13.6 to 7.9, or nearly 5 to 3. While the author does not consider the relative infrequency of arches among the Hebrews to be of fundamental importance, he offers no explanation for it. No indications of temperament, character, or ability are to be found in finger-marks.

Memoranda on Poisons. By Thomas Hawkes Tanner, M.D., F.L.S. Seventh American, from the last London edition. Revised by John J. Reese, M.D. Small 8vo, p. 177. Philadelphia: P. Blakiston, Son & Co., 1892.

The well-deserved popularity of this little book is indicated by the fact that this is the seventh American edition. Some new facts are introduced that have been brought out since the publication of the previous edition, and the nomenclature has been changed to conform with modern terminology, while matters that had become obsolete have been judiciously eliminated. The subject is of the greatest importance to the practitioner, and the student cannot too early in his career make himself thoroughly familiar with it. The knowledge is of a kind that is useless if not ready. This little book will be found to be accurate and sufficiently complete to meet all ordinary emergencies. Its size makes it convenient for constant carrying in the pocket. It should prove indispensable to all that require a concise, systematic and accurate grouping of the symptomatology, diagnosis, and treatment of cases of poisoning.

First Aid to the Injured and Transportation of the Wounded. By Henry G. Beyer, M.D., Ph.D., M.R.C.S., Passed Assistant Surgeon, U. S. N. (Proceedings of the United States Naval Institute. Vol. XVIII, No. 3.)

In recent years quite a number of books on emergencies have been written, and doubtless have been the means of directing general attention to the importance of giving intelligent instruction on the subject to those whose life-work renders them liable to be called upon at any moment to minister, as best they can, to some comrade stricken down beside them. The naval cadets at Annapolis, to whom the lectures before us were delivered, were fortunate in having the subject presented to them in an exceptionally clear, practical, and interesting manner.

Dr. Beyer wisely begins his course by explaining the nature, causation, and prevention of infectious diseases; then speaks of bacteria in their relation to wounds; and completes his foundation by dwelling upon antisepsis. After imparting some necessary information on anatomy and physiology, and giving instructions on the art of bandaging, descriptions are given of the various injuries —wounds, sprains, hemorrhage, shock, fractures, etc., etc.—with very clear directions as to the recognition and temporary management of each. The effects of heat and cold, drowning, sunstroke, and kindred casualties then receive their just share of attention, and the lecturer concludes his course by devoting the last lecture to the methods of transportation of the sick and wounded.

We take pleasure in saying of these lectures that they constitute one of the best books on "First Aid to the Injured" that can be found. They are written in a lucid and pleasing style, and all of the important points dealt with are illustrated by excellent cuts.

NEWS ITEM.

The Prize Essay on Homeopathy, by Dr. Browning, is now ready for distribution. It forms a neat pamphlet of thirty-three pages, and will be mailed, postage paid, at the rate of seventy-five cents a dozen copies—the cost of printing and postage. Orders may be addressed to Dr. George M. Gould, 119 South Seventeenth Street Phila., Pa.

Books and Pamphlets Received.

Phthisis in Relation to Life Assurance. By Thomas Glover Lyon, M.D. Pamphlet. London: Chas. & Edwin Layton, 1892.

Vom Thurm zu Babel. Von Henrich Stern. Milwaukee: Freidenker Publishing Co., 1892.

Experimentelle Beiträge zur Pathogenese der Brightischen Albuminurie und Nephritis. Von Mariano Semmola. Reprint. Wien, 1891.

Three Cases of Acute Mania from Inhaling Carbon Bisulphid. By Frederick Peterson, M.D. Reprint, 1892.

Anesthetics: Their Uses and Administration. By Dudley Wilmot Buxton, M.D., B.S. Philadelphia: P. Blakiston, Son & Co., 1892.

A Healthy Brain is Necessary to a Free Will. By C. G. Comegys. Reprint, 1892.

An Operation for the Radical Cure of Stricture of the Lachrymal Duct, with Description of a Stricturotome. By Charles Hermon Thomas, M.D. Reprint.

Preliminary Announcement of the First Pan-American Medical Congress, to be Held at Washington, D. C., U. S. A., September 5, 6, 7, and 8, A.D. 1893. (Executive edition.)

The Curability of Narcotic Inebriety. By J. B. Mattison, M.D. Reprint, 1892.

The Prime Etiological Factor of Glaucoma is Constitutional. By S. O. Richey, M.D. Reprint, 1892.

Asheville; or, the Sky-land. By Mrs. Harriet Adams Sawyer St. Louis: Nixon-Jones Printing Co., 1892.

Transactions of the American Surgical Association. Vol. X. Edited by J. Ewing Mears, M.D. Philadelphia: William J. Dornan, 1892.

A Complete List of the Officers and Fellows of the American Surgical Association, Together with an Alphabetically Arranged Index of Vols. I–X. 1880–1892.

Compressed Air and Sprays in Diseases of the Nose, Throat, and Ear. By Seth Scott Bishop, M.D. Reprint, 1892.

The Pennsylvania State College Agricultural Station. Bulletin No. 21. The Koch Test for Tuberculosis. Report of Work Done in Coöperation with the Pennsylvania State Board of Agriculture, 1892. By H. P. Armsby. Pamphlet.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

PERSISTENT STIGMATA RESULTING FROM CUTANEOUS DISEASE.[1]

BY JAMES NEVINS HYDE, A.M., M.D.,
PROFESSOR OF SKIN DISEASES IN RUSH MEDICAL COLLEGE, OF CHICAGO.

IN the pages that follow it is designed to call attention to those morbid appearances of the surface of the body which are the persistent relics of cutaneous disease. The word *stigma* is employed in this connection in the broad sense defined by the lexicographers, as the equivalent of a mark or sign. The stigmata that bleed, and to which this name has been restricted by certain writers in medicine, are not here included.

The special field, therefore, to which the attention is asked, is that of the persistent surface-markings of the hairy, and so-called non-hairy, portions of the body, which are the evidences, not so often of a disease that exists as of a disease that has existed, and, having undergone involution, has vanished, leaving, so to speak, its footprints behind it.

Surely there is here no need to urge strenuously the serious importance of the theme. It has a practical value for every physician and for every surgeon. There is no diagnostician, no oculist, no obstetrician, no examiner for the military service, for pensions, or for life insurance, who, for a moment, can afford to be ignorant of the object-lessons furnished by a dead disease. The knowledge to be gained by a study of these details has, at times, solved the problem of life or death; at times it has lifted one physician, struggling in a slough of doubt, to the solid ground of certainty; and it has furnished the clue by following which another has trod the pathway to his most brilliant and triumphant successes. He who is ignorant in these matters is indeed handicapped as against competitors.

In the brief time at my disposal I cannot venture upon an exhaustive discussion of this subject. I shall attempt to touch merely a few of the salient and interesting questions that it suggests. You are, indeed, all familiar with the ground, otherwise you would not be physicians and members of this honored association. All I can hope to do here is to awaken your interest by glancing at some of the facts which our common experience has collected.

[1] An address delivered, by invitation, before the Wisconsin State Medical Society, 1892.

The persistent stigmata of the skin are symmetrical or asymmetrical, generalized or circumscribed changes in the pigment or texture of the derma; a superfluity or absence of the pilary growth on the hairy parts; and scars, scar-like, keloidal, or atrophic patches following inflammation, perverted innervation, new growths, invasion of microörganisms (chiefly the obligate parasites), ulceration, gangrene, atrophy, and the growth of vegetable fungi upon the bodily surface.

The stigmata thus produced differ both as to frequency of occurrence and importance. Some are scarcely more than morbid curiosities—such are the milky skin and snowy hairs of the albino; some are pure disfigurements—such are the oddly notched patches of baldness seen very rarely over the occiput, temples, or vertex of the subject of an ancient and obstinate but departed favus; others again are almost of a physiologic type, and among these may be enumerated the symmetrical baldness of the scalp of the old man, and the atrophic striæ in the abdominal integument of a woman, visible during life after a first pregnancy.

All these tell their own story, and tell it very plainly. We read it daily with scarcely an effort. Some are even recognized at a glance by the profane, and are interpreted with greater or less accuracy, according to the education of the observer. Others are of greater significance for the practitioner. They are persistent stigmata of diseases that have been, it is true, but are also traces of a disease that, though vanished for the time, may have its reawakenings. They may furnish the tokens of a disease that, having done its worst in one region of the body, may yet attack another. It may be the last that attracts our attention—for the relief of which, indeed, we are summoned. It may, however, be the former that will indicate to us the nature of the process.

Without question, the stigmata of first importance in this view are scars. They have been well defined as new-formed substitutes for lost connective-tissue. A disease that leaves a scar is a malady whose lesions have invaded and destroyed a few, at least, of those connective-tissue cells that are ingeniously woven into the basket-like structure we call the true skin. We cannot tell how many must be destroyed, or how deeply the destructive process must advance, before indelible scarring results. We only believe that some scars are transitory and some persistent.

But we may be pretty confident that the eye of the microscope, if properly directed, would recognize a persistent scar in any skin where a needle has once been thrust down completely to the panniculus adiposus. It is true that we say, metaphorically, that Nature delights, as the years slip by, to smooth out the deformities and obliterate the signs of damage done in the past. But, for all this, the fact remains that a pin or a needle thrust into the skin of a child may leave a mark which can be recognized in the dead body half a century or more after the infliction of the traumatism.

It has been said that if one could be suddenly transported to the city of London in the beginning of the present century, and be enabled when walking its streets to observe the pedestrians on its sidewalks, he would be first surprised, not so much by the strangeness of their dress, of their speech, or of their manners, as by the fact that such an enormous proportion of them bore upon their faces the disfiguring scars of smallpox. It is probably within bounds to say of the closing years of the century that, if we were enabled to scan the naked bodies of all the pedestrians on our streets, it would be seen that the scars produced by syphilis far outnumber those produced by smallpox. In the last-named disease the scars are more conspicuous because thickly set over the face; in the other, the scars are more often formed on the lower extremities, and are therefore not exposed to the eye of the casual observer.

Every physician should be so thoroughly familiar with the scars left by syphilis that, if need be, he could swear in court to their character. When perfectly typical they resemble nothing else in the entire scope of pathology, except a relic of the syphilitic process. Let us look at them carefully for a moment, and then at their value in a diagnostic view.

First, then, they are often elegantly rather than clumsily wrought. The ulcers of late syphilis are often so formidable and threatening that one who is not expert will not foresee how delicately and beautifully repair will be accomplished and the evidences of mischief smoothed away after the lapse of five, eight, or ten years. Even the rift in a mountain or rock is partly filled by its own detritus after the storms of a few seasons have swept over it.

Second. As syphilitic ulcers are commonly rounded in outline, so these peculiar scars are in circles, or parts of circles, giving us the semilunar, quarter-moon, and gibbous outlines, with combinations representing the figure 3 or 8, the letter S, the form of the kidney, of the horseshoe, and of the dumb-bell.

Third. The pigmentation they exhibit is peculiar. It is best studied naturally in the lower extremities, where, as in the cicatrices following traumatism and healed varicose ulcers, the staining from coloring matters brought thither by the blood effused in excess in and about the part is most conspicuous and persistent.

I think there is no question but that both individual and race peculiarities influence the degree of this staining. It is marked in many deep brunettes; it is rarely as disfiguring in very light blondes. In the scars of syphilis, which we are now studying, the color in the cicatrices following freshly-healed ulcers is at first that simply of hyperemia, dull-reddish, purplish-red, occasionally even pinkish-red. As the infiltration subsides the color becomes more apparent, till we have every variation, from the deepest chocolate to the lighter brown, evenly tinting the scar-tissue, and in some cases more than others staining the integument beyond the outer wall of the cicatrix, forming with a species of pigmented halo, half or a full finger-nail in width, and corresponding in shape to that of the ulcer which preceded, semilunar, kidney-shaped, etc.

After a period lasting from a few months to as many years, the process of discoloration begins in these singular-looking stigmata, the difference of time depending largely upon the general vigor of the patient, and upon the occupation—a prolonged observance of the erect posture, as in wheelsmen of vessels and train-drivers, being unfavorable to rapid removal of these coloring matters.

The entire process of decolorization may be concluded in three or four months, but may require a much longer period. It has occurred to me that it is more rapid in women than in men, but of this I am not positive. A completely decolorized scar of the leg, wholly destitute of undue pigmentation, in a male patient of average weight and vigor, commonly points to a syphilitic infection from six to twelve years previously, unless the decolorization has been completed and the scar has remained practically unchanged for some time. Then, of course, one can often verify the fact that fifteen, twenty, or twenty-five years have elapsed since the date of infection.

Let us look for a moment at this wholly decolorized scar. It is perfectly distinct texturally, though suggesting to the scientific eye that can read its past history, that it is faded. It is smooth, unattached, occasionally picked out in points, as though one had treated it with the tool of the engraver or the burin of the etcher. Its color is that of the familiar dead-white of an old scar; but very rarely indeed is it rigid, puckered, or elevated as in spurious or true keloid. Occasionally, even when ancient, there is an appearance at one or more points of a thin scale, which may be detached from its surface. Its conspicuous features are its delicacy and its thinness. It may, with great readiness, be plucked up from the

tissue beneath, between the thumb and finger. It is best compared with a thin sheet of mica lightly let into the skin. It is very slightly depressed beneath the general level of the integument.

Repair has been so finely wrought in such a case that as one sweeps the fingers over the surface it can scarcely be recognized by the touch where the new-formed tissue exists; and the movements of the limb may not cause the slightest puckering of the skin where the scar is formed. It answers admirably all the needs of the part, save that it does not furnish sweat or other secretion in normal measure, and but few if any hairs appear upon its surface. Who would suspect, upon examination of this superficial and at first sight insignificant patch, that it had been once the seat of a deep, exquisitely painful and even formidable ulcer, boring within to the very lowest stratum of the panniculus adiposus, and causing in some patients more apprehension than a fractured leg or an apical pneumonia?

There are some variations of this typical portrait that must be studied in order to compass our end. Almost every syphilitic cicatrix of the size of the section of an egg or larger, if examined with care, will be found to be made up of a congeries of smaller lesions, each of which is possessed of the characteristics of the larger. The mode of grouping of these smaller scars, each, perhaps, as large as a thumb-nail, is quite in accordance with the law of the circle we have been studying. Sometimes, rather more rarely than in the other forms that we have to notice, a large central lesion is surrounded by a circlet of the smaller, suggesting the familiar arrangement seen in a brooch set with pearls. Again, we have the so-called "satellite" figures, a larger patch, with one or two of the smaller set on at the edge; or the figure is strikingly like that of a trefoil or quatrefoil slightly distorted from the strict architectural pattern. At times the patch is made up wholly of these small circlets, compactly gathered within an oval, roundish, or circinate outline, the compound lesions conforming in every detail to the description given.

Studying these combinations, whether in the figures selected for illustration or in the S-shaped, kidney-shaped, or often variously shaped figures, we find that each component element of the group may be recognized as to age by its separate decolorization-process. In a patch of this kind one may at times see that the process of whitening is going on at nearly the same rate in each scar, all for example at the moment of observation being provided with a tolerably clear or clearing center, and a reddish or purplish rim outside the latter.

It goes without saying that the still highly tinted and not wholly decolorized cicatrices of syphilis are often seen in combination with, or in close juxtaposition to, the ulcerative or resolutive lesions that originally produced them all. Thus in a circinate group a cluster of finger-nail-sized scars may form the crescentic border of a patch the corresponding incurved border of which is made up of healing ulcers where gummata have softened, each a miniature as to outline of the scar that will succeed. A consideration, however, of these unhealed lesions would lead us too far from our present purpose, that, namely, of viewing only the stigmata that persist.

Studying these interesting relics of disease in other regions than the lower extremities, we discover always the same general characteristics, with differences due largely to peculiarities of situation. On the other extremities, for example, we find scars of the same type, but with very much less pigmentation, and this latter, when at all conspicuous, is removed in a far shorter time than elsewhere. Thus a group of shallow and depressed, circular bean-sized scars, a dozen or more in number, may be seen over one or both of the olecranon processes (a common site) quite destitute of color in six months after their first development; and the same may be said of a large saucer-sized and saucer-shaped patch that may be seen over the point of a shoulder, near the clavicle, in front of the upper chest, or, not rarely also, over one hip—all favorite sites of this peculiar disfigurement.

It is on the face that the characteristics we have been studying are first lost, and where confusion is most likely to arise. The causes are, *first*, the frequent absence, for more than a few months at the most, of the pigmentation; *second*, the configuration of the folds of the skin of the face, making irregularities in the surface; and, *third*, the interference with the natural progress of repair, often mischievously directed, in order to overcome at an early hour the too evident impairment of personal comeliness. The chief variations from type are as follows:

1. The multiple and almost symmetrical small (pea-sized and larger) scars left by resolving or ulcerating tubercles. These are likely to be confounded with the scars of variola, on account of their great number and the absence of the typical features of the scars we have been studying on the lower limbs. They are often no larger than peas or beans, are somewhat symmetrically, at times very irregularly, strewn over the face, and are set into the skin about as deeply as the cicatrices of the same region left by smallpox. But the differences between the two, however close may seem the resemblance, are on careful observance apparent.

The syphilitic scars of this order are seen more often and more abundantly upon the upper half of the face, while the variolous relics are more generally and impartially diffused. In syphilis the

scars affect the brow preëminently; and after this the temples, the outer nares and the outer angles of the lips; often the tip of the nose, the center of the upper lip, and the entire chin are spared. The marks of smallpox are often conspicuous in these last-named regions, and in well-marked cases are thickly and uniformly spread over the whole countenance—an exceedingly rare occurrence in syphilis.

2. The single, small, or relatively few larger deforming scars of the face more nearly approach those of the type studied on the lower extremities. These are illustrated by the crescentic cicatrices visible a short distance from the angles of the mouth, set into the skin of the cheek, the convexity turned toward the angle of the jaw, the concavity or plane outline next the mouth. These may be an inch or more in diameter, and when closely studied exhibit the traces of the gummatous ulcer in outline and superficial erosive action. Such scars, too, are not very rarely displayed upon the lower brow, as if one had taken for a center the point of exit of the supra-orbital nerve from its foramen on one side, and swept over the brow a semicircle with a radius of half an inch or more. A smaller scar of this type is formed in some patients in front of the ear, looking something like the outline of a seashell, semi-crescentic in contour and not larger than a thumb-nail.

3. Lastly, the wholly irregular scars of the face, the difference of which in type from all those previously described, is due either to traumatism or to the influences of special traction in the performance of the functions of the facial organs. Here may be named the strictly linear scars, vertically directed along the brow where scratching has occurred, or when the finger-nail has torn off a crust and with it a portion of the integument, directing the ulceration in a peculiar line. This is of the rarer type. Much more common, and, for the purposes of diagnosis, much more important, are the so-called lines of puckering at the outer angles of the lips. These, when typical in the adult, are not one whit less significant than when seen in the infant affected with inherited disease; and are usually due to the same cause, viz., the occurrence of ulceration as a complication of mucous patches in the muco-cutaneous folds about the angles of the lips. They are always radii from the long axis of the oral cavity, rarely proceed to any distance from the verge of the mouth, and present an odd-looking, puckered appearance that persists through life. So far as is known to me they are absolutely diagnostic of syphilis; I have never seen them, with characteristic features and when affecting both angles of the mouth, in any other disease.

In this same group may be named the exceedingly irregular, small-sized, isolated scars of syphilis found upon the face. These are jagged, single depressions, one or two of which exist in some patients on the sides of the root of the nose, on one cheek or both, or in the region of the beard in the male subject.

It was once held by some excellent diagnosticians that the *alopecia prematura* of the scalp in the third decade of life was suggestive of syphilis. We now know that this was a palpable error. It is a demonstrable fact that there are no forms of baldness of the hairy scalp so amenable to a proper treatment, so often, indeed, remedied without any treatment, as the early symmetrical alopecia of recent syphilis. It is, however, far different with alopecias of late syphilis. These are all due to cicatricial lesions, or those going on to the production of cicatrices. Here we have a distinct recurrence of our type studied in the leg. On examination the scar does not, at first sight, stand out so conspicuously as upon a non-hairy surface. We have to separate the adjacent hairs in order to gain a view of it. When fully disclosed it is seen to be our old friend, and with scarcely an attempt at disguise. There is the crescentic border, the reddish or purplish hue of the surface not long healed; the deeper purple for a brief time after the healing; then the relatively rapid decolorization; lastly, the dead-white or dull-white scar, with, perhaps, one or two hairs only growing in the center of the bald patches, which are as large as a silver dollar, or the section of a hen's egg. This is the seat and explanation of the irremediable alopecia of authors, due to late gummatous involvement of the scalp.

Lastly, in this hastily-enumerated list, must be named a scar of interesting features, belonging, however, to quite a different period of syphilis, and due also to causes different from those heretofore considered. At no very remote date examiners for the military service of the United States Government were cautioned to search for scars upon the penis as signs of chancres. Let us hope that in this late day they are wiser in these matters. It is well known that the immense majority of chancres on the progenital region of the male leave no scars. The initial sclerosis is usually resolved, leaving no trace behind it of the primitive accident. The majority of cicatrices left in this region as sequels of venereal accidents are those of chancroids, the so-called "soft" or contagious, auto-infective pustular and ulcerative lesion of this region.

It is well known, however, that continued irritation of the initial sclerosis of syphilis may cause it to ulcerate so deeply that it will erode the connective tissue of the derma to an extent sufficient to leave a scar. Savin cerate, caustics frequently applied, and spontaneous gangrene (rare of occurrence, indeed) may induce this erosion. There is,

however, one initial sclerosis that is the seat of well-nigh constant irritation till its usually long-deferred healing is completed, and that is the infecting chancre seated immediately within the meatus urinarius. One very emission of the urine its surface is covered by a fluid highly charged with urinary salts, and the pain of micturition is correspondingly great. The diagnosis of this lesion, when in activity, is made with the greatest ease, without the aid of the endoscope. When the tip of the glans is manipulated by the finger and thumb of the surgeon, the sclerosed mass of the chancre is distinctly felt as though it were a cylindriform mass, no larger than the stem of a common clay pipe, and scarcely as long as a digital phalanx and substituted for the normal urethral channel. The incessant irritation at last produces scarcely so much ulceration as it does a deeply-seated erosive action, which results in reaming out the meatus urinarius. When all is healed the apex of the truncated cone, represented by the tip of the glans, is seen to be lost. The acorn-shaped body is destitute of its delicately-finished tip. It has an obtuse or blunt apex; and the perfect accuracy of adaptation of the lips of the meatus is forever lost. Instead, there is an odd-looking funnel-shaped gap of the mouth of the conduit, with the flaring end of the funnel directed toward the eye of the observer. This, too, in my experience is produced only by the syphilitic chancre. The gangrenous or deeply ulcerating chancroid will mutilate the glans in the most lawless manner, remove one-half or more, or even the whole of the organ, in the most irregular way, will gouge out one side or the other, and leave the urethral orifice as a chasm where once the frenum stretched its slender arm for the suspension of the scrotum. But almost never will the process cease with the delicate reaming described. Cicatrices in the groin of one or both sides have no significance for most cases, as regards the diagnosis of syphilis.

It is the diagnostic importance of stigmata like these that makes them especially interesting. Let us glance for a moment at a few pictures drawn, like the silhouettes of the artist rather than in the serious style of the time-honored "reports of cases," each of which without much detail may illustrate to a degree some point to which our attention has been already attracted. Each has this merit at least, that it is drawn directly from practical experience, and represents a serious fact in pathology.

1. A healthy-looking young widow, with a history of eczema of the left elbow one year before, has an infiltrated patch upon one naris threatening the integrity of the whole organ, from which she has suffered for months, and which has been pronounced lupus by four physicians of acknowledged repute. One of them has administered an anesthetic and thoroughly scraped the lesion, without benefit. The physician last consulted insists on a careful examination of the elbow where the so-called eczema was located the year before, and he recognized at a glance typical multiple and bean sized cicatrices grouped in a circle, with two outlying "satellites." He thus fortifies the correct diagnosis of the nose-lesion, and, after administration of appropriate remedies, the nose is healed in a month, the sole deformity resulting from the abortive scraping.

2. A ruddy-faced merchant in middle life, the father of healthy-looking and wholesome children, lies in bed suffering from atrocious retro-sternal pains that have lasted for a week, and for which he is vainly treated by two physicians, both believing that the pleura is seriously involved. The patient becomes hourly worse, and describes his pains with an eloquence that in itself is suggestive. A consultant, being summoned, makes a more careful examination of the person and recognizes a decolorized, circular, and typical cicatrix, reported to be twelve years old, over the left thigh. It is of the large single pattern, unattached, smooth, and free from ribs and puckerings. Diagnosis is made of a retro-sternal gumma, which is properly resolved, the pain subsiding in three days under efficient doses of the salts of iodine.

3. A gray-haired lady of social position, sixty-five years of age, widowed for fifteen years, is a helpless wreck, unable to use hands or feet, wheeled about in a chair by her maid; she has had an elevator built in her home to enable her to visit her dining-room with her children. She had been treated without avail by many physicians for ten years, and then, growing steadily worse, she abandoned hope and settled herself in her chair, anxious, during her remaining years to brighten with her mental qualities the domestic atmosphere in which she lives with her two sons. The morbid condition of the nervous centers has resulted in distorting the fingers so that they are curiously twisted into the palms, and the toes are similarly affected. Spurious ankylosis has rendered the larger joints useless. At the last a physician is summoned for relief of the annoyance caused by a successive shedding of one or two of the finger-nails, and he is sufficiently interested to explore the case thoroughly and in all its details from the beginning. He discovers two typical cicatrices on the inner faces of the tibia, wholly decolorized, which plainly declare that the entire train of symptoms began with luetic infection by the husband twenty years previously, with serious results, as respects the nervous centers, all of which might have been averted by an appropriate therapy at an earlier date. Under the treatment now pursued the nails are no longer shed, and some use of the fingers is regained.

4. A California superintendent of mines, vigorous of constitution and brawny of limb, comes to the city for the purpose of having an epithelioma removed from his upper lip. The date is fixed for the operation, but the day before that date he chances to consult another physician than the one selected for the operation, in order to verify the diagnosis. The patient is now stripped, and after examining the

whole body, as well as the lip, with care, there is discovered a scar over the elbow, in consequence of which the operation is deferred a fortnight. The result is that the lip is healed without resorting to the knife.

5. A young and childless wife, of fair nutrition and good general health, consults her physician for an egg-sized tumor which has slowly formed in the mass of the right breast during the preceding six months. She is naturally greatly alarmed lest she be the victim of carcinoma. An examination is made with care, the result being that two or three firm subcutaneous marble-sized nodules are recognized near the left elbow, where there is also a group of pea-shaped cicatrices that indicate an infectious disorder. The gumma of the breast is made to disappear after appropriate internal and external treatment.

6. A middle-aged dentist is in his bed and supposed to be dying, his wife, mother-in-law, and other relations weeping over him. His physician has been faithful in attendance for three weeks, but the patient, in spite of all treatment, has grown steadily worse. He lies supinely, breathing slowly, and is insensible, and incapable of performing the acts of deglutition; the pupils are dilated. By tickling the soles of the feet certain reflex movements can be excited. The temperature is not abnormal. The pulse is somewhat accelerated. A consultant, after securing details of the history of the case, strips and examines the body with special care. A reamed-out, funnel shaped meatus urinarius is discovered, with the result that a tenth of a grain of calomel is placed every hour on the tongue of the man supposed to be dying, and in three months he goes to Europe for the restoration of his health, and in two years is the father of a handsome baby.

7. A well-developed young Englishman, twenty-five years old, whose case has been pronounced lupus by half a dozen of the most eminent physicians of Great Britain, including the consultants of some of the largest London hospitals, applies to a competent surgeon for the amputation of his right arm. The limb is so tumid, distorted, and clumsy, and its fingers are so twisted and misshapen as to render the member worse than useless. It is actually so much in the way as to encumber him in the work he is yet capable of doing with the sound arm of the other side.

The surgeon, before deciding upon the proper course, consults with a diagnostician. The latter strips his patient and examines him from head to foot with scrupulous care. He discovers upon the posterior surface of the left thigh a dinner-plate-sized circular scar, with pigment not yet wholly removed from the center, and some odd-looking crusted lesions at the periphery of the circle. The man is vigorously treated for gummatous infiltration of the offending limb, with the result of rapidly reducing it in size to a point where amputation is not even considered.

Illustrations of this sort might be multiplied almost indefinitely. They indicate with clearness that there is scarcely any problem presented in any department of medicine or surgery which may not be solved by a discovery of one or more of the stigmata to which we are now directing attention.

Perhaps it will be more useful, in the time that remains, instead of noting the points of differential diagnosis between the scars of syphilis and those of other diseases, to glance briefly at some of the characteristics of the persistent stigmata likely to be confounded with those we have been studying.

The scars of herpes zoster (shingles), whether on the face or body, proclaim themselves to be such, almost at the first glance, by the rule of their symmetry. This rule is almost never violated save when we have zoster of the region supplied by the fifth nerve, and this is such a curiosity that very few even of experts have seen it. The cicatrices (which do not result in all cases) are so distinctly arranged along the lines of distribution of the nerves of one side of the body that one can scarcely confuse the groups of indented scars, each suggesting that it had been made by some such instrument as a carpenter's nail-set, with the irregularly packed and less defined, as also less deeply depressed and symmetrical scars of smallpox. In shingles of the region supplied by the supra-orbital nerve there are in some cases not merely persistent relics of the disease in the skin, but traces of damage inflicted upon the eye in the form of corneal opacities, and even destructive changes in the deeper structures of the globe.

Looking, then, at the three prominent disorders producing cicatrization of the skin of the face, we have: Smallpox—its scars almost invariably symmetrical and general; those of zoster, almost without exception symmetrical and never general, but always in the areas of distribution of the facial nerves; and those of syphilis, sometimes symmetrical and sometimes not, but never distinctly limited to areas of nerve-distribution, and, whether occurring on one or both sides of the face, selecting (as the other diseases named never do) the regions near the corners of the lips and lids, and the upper in preference to the lower portions of the face. In any event, if few or single, and in one region only, they represent a diversion from type rarely encountered in the other diseases here named for the sake of contrast.

The scars of obstinate, persistent, and vanished facial acne are often general and symmetrical, but never of the defined and deeply-set character of those of variola, syphilis, or zoster. They are, moreover, distinguished in all severe forms by the peculiar keloid-like ridges into which several of them are converted. The puckered, elevated, corded, and ribbed irregularities of either cicatrices or the tissues between the latter, are well-nigh pathognomonic. In case of doubt it may be well to remember as to these pictures of an ancient, rebellious, and ill-

treated acne, that when the inflammatory processes have all ceased and there are left only stigmata upon the field where the battle was once fought, there is almost, without fail, a similar picture presented upon one portion or another of the dorsum of the chest, where also, usually, the keloidal complication is seen to best advantage in exaggerated forms.

The scars of lupus need never be confused with any of those thus far considered. In lupus vulgaris the cicatrix always possesses a distinguishing absence of special peculiarities. It is by this that it is best known. Mr. Jonathan Hutchinson was once pleased to describe syphilis as an "imitator" of other diseases. Lupus vulgaris may be said to imitate nothing, not even itself! The scars left in this day, when lupus is in so many cases satisfactorily managed by modern methods, is really the scar produced by the treatment of the malady. The processes of erasion by the sharp spoon, of destruction by the Paquelin knife, by caustics, by scarification, or by the later chemical combination of salicylic acid and creasote, leave cicatrices of all sorts, marked by their exceeding irregularity. In almost all cases these are wonderfully smoothed away in the course of time as the young girls, who constitute the majority of patients thus afflicted, advance to the maturer life of womanhood. It is, indeed, remarkable that, in a decade after a nose has been half eraded or wasted, if there be actual arrest of the disease the deformity is to such a degree hidden by well-rounded, even well-tinted cheeks, and the comeliness of the unaffected portions of the face. For other cases there are only the most irregular and deforming stigmata, scars more disfiguring than those of severe burns, everted or contracted lids, noses reduced to absurd miniatures of their former selves, or moulded into the familiar pattern of the parrot's beak, with the tip carried down toward the upper lip, and the nares on either side wasted as if carved into the lateral cavities by the chisel of a caricaturist! The same may be said of the ear, which has been fastened to the cheek or reduced to a mimic and mutilated image of the organ in health. Fingers, toes, and hands undergo similar changes, with deformities defying description, comparable only to the frightful ravages of lepra. In all this we find no law; only a lawlessness that attracts our attention to the very fact of its defiance of restriction.

In lupus erythematosus, more particularly of the face, in which cicatrices are most often observed, the result is far different. Here we have an aid to diagnosis, the special configuration of the patches of the disease producing the characteristic "butterfly's wing" appearance, the scar representing the body of the insect stretching along the bridge of the nose, while the scars corresponding to the wings are spread over the cheeks, one on either side. Here the scar is superficial, well defined, at times symmetrical, decidedly preferring the nose and adjacent parts of the cheeks, but involving also the lids, the lips, the ears, and the scalp. When the disease is at an end the scar is thin, whitish, very slightly depressed, very definitely outlined, and at times looks as if it had been picked out with the engraver's tool—that is, pointed here and there over its surface; each of these points probably representing the orifice of the excretory duct of a sebaceous gland. The scars are often very delicately finished, and especially on the hands and fingers may at times be represented by delicate, whitish cords, linear in shape, and, as to length, relatively short.

Upon the lower extremities the cicatrices representing ulceration due to varicosities of vessels, and often an accompanying eczema, may be as deeply pigmented as any of the relics of syphilis in the same region. Indeed, in well-marked cases the deep chocolate-brown staining is in the former instances more distinct. But, if closely scanned, one can recognize in the non-specific cases an indefiniteness of outline at one point or another, while the typical syphilitic cicatrix already described is wholly absent. In making a differential diagnosis it should always be remembered that with the lapse of time the eczematous and varicose conditions, as a rule, present the portraits of more severe damage than the syphilitic lesions; because, however deep and grave the gummatous ulcer, it is, in the course of time, so exquisitely smoothed away that its traces are superficial, wholly decolorized, and non-attached. On the other hand, the formidable-looking ravages in the lower limbs, marked by extensive and irregular scarring, by much more persistent and deep pigmentation, by attachment of cicatrices to the deeper structures, and, especially, by the varices of vessels in the neighborhood, are generally of non-specific origin.

There are very rarely seen on the lower limbs, or the surface of the thighs more often than of the legs, one or several lesions looking like scars, which are not such, and which are often erroneously interpreted by those who are not expert in the recognition of cutaneous stigmata. These are the odd and interesting discs of morphea, named, according to the teachings of a later pathology, "circumscribed scleroderma." When perfectly typical, these atrophic, scar-like, dead-white, ivory-white discs, rarely larger than the half-section of a hen's egg, have a very distinct contour, bordered with a violet-tinted zone. When examined closely, this belt is seen to be constituted of a delicate plexus of minute vessels. This zone is rarely more than a line or two in width. The surface is either smooth and on the level, or

at times even slightly elevated above the level of the surrounding integument, with occasional punctate marking over the patch. When, as in the case selected for illustration, there are several such patches, they are seen arranged in the line of the long axis of the limb and according to the distribution of the nerves. They are usually unilateral, and may be seen upon the head, the face, and elsewhere, though more rarely even than on the lower limbs. The non-attachment of the diseased patch to the substructure of the integument, the general absence of hairs and of secretion, and the occasional coloration of the patches, which in the end may be markedly depressed below the general level, increase their resemblance to scars. They may not, however, in all cases prove to be persistent stigmata, as they occasionally disappear spontaneously or under treatment. In some cases the attachment to the deeper structures is conspicuous and disfiguring.

Allied to these curious patches are the striæ, and even lesions of circular outline, which are recognized as simply linear and macular atrophies of the skin. The lines observed upon the abdomen of women after pregnancy are of this particular order; and it is interesting to note that in rare cases they may be seen fully as conspicuous on the abdominal surface of the healthy adult male subject who has never suffered abdominal distention from disease.

The white patches of vitiligo, or leukoderma, as the disease is termed by some authors, are so well known that the merest reference to them is here needed. They occur as rounded, oval, or irregularly curved patches, one or many in number, with the pigment wholly removed from the disc, which is left of a dead-white color, as are also the hairs which chance to grow upon the affected part, the pigment being heaped up in excess about the convex circles limiting the edges of each. These may develop upon any part of the body and at all times, and slowly spread by multiplication and coalescence till a large part of the bodily surface is successively whitened, as in the piebald negro, whose skin, in exceptional cases, becomes well-nigh dead-white. The chief reason for naming these lesions in this connection is to call attention to the striking fact that they are actually among the persistent stigmata of the skin. They are usually most conspicuous in summer, it is true, partly on account of the change occurring in the pigment of the border under the influence of heat and sweating. Occasionally the reverse is true, that they are most conspicuous in winter, and least so in the heated term. But, as a matter of fact, the bleached patches never acquire the pigment they have once lost. If there be any method of reawakening the mysterious forces by which pigment is produced in the patches whence it has once been removed, certainly none is known to science in our day. A knowledge of this fact may save much disappointment to those patients who may still be found making local applications to vitiliginous patches in the vain hope of restoring the natural color, or, what may be justly described as worse, who are swallowing drugs in the delusive hope that they may compass the same end.

Gentlemen of the Society, I close with an expression of regret that I have been able to touch at such few points and so imperfectly, the vast, important, and interesting field suggested by my theme. I shall be well content if, by these fragmentary remarks, I have attracted attention to any part of it. If a visitor from another planet than ours, interested in our scientific methods, were to question one of us on the subject of these stigmata, I can imagine him saying: "As the internal organs of the body are all hidden from view within its living envelope, I suppose that most of your physicians are better acquainted with the diseases that are betrayed on the exterior than with those that affect the viscera, such as, for example, the lungs, the liver, the heart, the kidneys, or the bladder." Imagine his surprise on hearing the response: "You are quite in error. The average physician on this planet we call the earth will frankly admit to you that he knows a great deal more of the disorders of internal organs than of those betrayed in the surface-markings of disease that are spread before his eyes."

TRAUMATIC LESIONS OF THE SPINAL CORD.[1]

BY GEORGE J. PRESTON, M.D.,
PROFESSOR OF PHYSIOLOGY AND DISEASES OF THE NERVOUS SYSTEM, COLLEGE OF PHYSICIANS AND SURGEONS, BALTIMORE.

INJURY to the cord, resulting from external violence, is of rather more frequent occurrence than would be expected if we consider how well protected the cord is. The peculiar construction of the vertebral canal, the strength of the individual vertebræ, the very perfect and extensive articulations with each other, the elastic intervertebral discs separating the segments, and the various ligaments binding the parts together, require a high degree of violence to produce either dislocation or fracture. Added to this the spinal canal is much larger than its contained cord, and the latter is consequently not in direct contact with the bony walls, but is suspended from above, and steadied laterally by ligaments and emerging nerves.

The most common form of injury to the cord is that which results from fracture of the vertebræ. This accident occurs as the result of a general crush, as by a fall of coal in a mine, or of earth or stone in a tunnel or quarry; also by external violence applied at

[1] Read before the Clinical Society of Maryland, December 16, 1892.

one point, as when a man is caught between cars. Not an uncommon cause is a fall, which may cause fracture of the vertebræ either directly, as when an individual falls flat upon the back, or indirectly from striking upon the head or feet, the force of the fall being felt most strongly at certain points along the vertebral column. Extreme flexion of the body, or twists, may produce dislocation or even fracture. Gunshot wounds involving the vertebræ, while not very common in civil, are often met with in military practice.

As a result of these and similar injuries to the bony structures, the cord may be compressed, more or less lacerated, or entirely destroyed. Compression may be occasioned either by the broken bone impinging directly upon the cord in the shape of a fragment or spicule, or by a narrowing of the canal. The points at which fracture is most likely to occur are the cervical and lower dorsal regions, unfortunately the very points where the cord can least afford interference with its function. Compression of the cord may result from hemorrhage within the spinal canal, due to rupture of the spinal veins. Finally, when the cord itself is not injured, the meninges may be torn and the cord suffer secondarily.

In addition to the class of cases already referred to must be added those cases in which, without any fracture or dislocation of the vertebræ, the cord suffers more or less severely. Concussion of the *spine*, or *railway spine*, as this condition is wrongly called, has occasioned a good deal of rather acrimonious debate, largely due to the fact that the subject has been so often in the courts. While concussion of the cord is infinitely less common than concussion of the brain, it undoubtedly does occur, and we may have all grades of injury, from a mere temporary suspension of function up to a considerable degree of laceration, without fracture of the vertebræ.

The symptomatology of injury of the cord is coextensive with the functions of the cord, as any part of the latter may be involved. As far as location goes, we need consider only the cervical enlargement, the mid-dorsal region, and the lumbar enlargement.

In the cervical and lumbar regions are situated the important centers for the muscles of the upper and lower extremities and for the thoracic and abdominal viscera, and entering these portions of the cord are the sensory nerves from the extremities. Injury may therefore involve the nerve-centers or cells, or the white matter alone. In the dorsal region the gray matter sinks into insignificance, and we are concerned mainly with the extent of the involvement of the white matter or fiber-tracts in their passage to and from the brain.

The symptoms of injury to the cord may be divided into primary and secondary. By primary symptoms are meant those that appear suddenly, as the immediate result of the injury—such, for example, as paraplegia. By secondary symptoms are meant those that come on at a later period in the form of degeneration of fiber and cell; this class is illustrated by the various muscular atrophies and trophic lesions generally. In discussing briefly the primary symptoms of injury to the cord, it is necessary first to note those symptoms of a general nature and not dependent upon the location of the injury, and then the special symptoms that depend upon the region involved and the extent of such involvement.

The general symptoms of injury to the cord are few. Shock is present to a greater or less degree, sometimes being marked after slight injuries, and at other times present only to a slight degree, though the injury may have been severe. Consciousness is rarely lost, even in cases proving rapidly fatal. Of particular interest is the rise of temperature, noted especially in injury to the cervical cord, and, in lesser degree, in injuries in the lower dorsal and lumbar regions. No very satisfactory explanation of this phenomenon can be given. If it were met with only after injury to the cervical cord it might be explained on the ground of interference with the heat centers, supposed by some physiologists to be located in that region; but as injury at any level may produce rise of temperature, we must conclude that this is due to interference with the fiber-tracts connected with the heat-regulating centers. Varying degrees of pain may be present, depending upon the location and extent of the injury and the involvement of nerve-roots. Priapism is a common symptom, especially in injuries to the cervical cord. Rosenthal mentions a case of injury to the cervical cord in which the priapism lasted for seven days during life and for thirty-six hours after death.

In discussing the special symptoms, it is important to bear in mind the fact that we may have all grades of injury, and consequently the intensity of the motor and sensory symptoms will vary accordingly. Again, the cord may be involved to a greater degree on one side than on the other, causing a difference in the symptoms of the two sides. When the middle of the cervical enlargement is involved, somewhere about the sixth or seventh cervical vertebra, there is loss of motion in all parts below the level of the lesion, and of sensation over the inner half of the arm and forearm and all below this level. The temperature is always notably raised, the pupils are contracted, and the breathing is diaphragmatic. Lesions high up in the cervical region cause loss of motion and sensation from the neck down, interfere seriously

with respiration, and are usually rapidly fatal. The two following cases illustrate very well the symptoms of injury to the cervical cord: the first case is one of injury to the upper part of the cervical region; the second, of injury about the mid-cervical region.

CASE I.—A male, aged twenty-four, gave a history of having plunged head first into shallow water. When admitted into the hospital, some ten or twelve hours after the accident, examination showed no signs of injury to the head. The head was somewhat retracted and any movement of it caused intense pain. All four extremities were paralyzed, the lower completely, the upper being capable of some slight movement. Sensation was lost from the neck down. Breathing was purely diaphragmatic. The patellar reflex was present, and the pupils were contracted to pin-points. The temperature was 104° F. The mind was perfectly clear. There was priapism and loss of control over the bladder and rectum. Death occurred on the evening of the day he was admitted into the hospital, which was the day following the reception of the injury. The temperature, taken in the rectum four hours after death, was 110° F. The autopsy revealed a fracture of the fifth cervical vertebra. The cord showed laceration at the point of fracture, with extravasation of blood extending about an inch vertically.

CASE II.—A male, aged thirty-seven, fell about forty feet upon a rough, irregular surface. Examination shortly after the accident showed a lacerated wound of the scalp, but no fracture of the skull. He was perfectly conscious. There was complete paralysis of the lower extremities and partial paralysis of the upper. Sensation was entirely lost from the level of the third rib down, and impaired over the chest and arms. Respiration was diaphragmatic. Priapism was marked. There was paralysis of the bladder and rectum. The pupils were finely contracted. The temperature, 103° F. an hour after admission, reached 109° F. just before death, which took place the day following the reception of the injury.

At the autopsy it was seen that the laminæ of the fourth and fifth cervical vertebræ were fractured on both sides; the dura was slit longitudinally and there was an extra-dural hemorrhage posteriorly. The cord opposite the fracture showed hemorrhage and disintegration of its substance.

Lesions in the mid-dorsal region, if complete, cause loss of motion and sensation below the seat of injury. If the lesion be high enough, the arms may be slightly affected both as to motion and sensation, thus approximating the symptoms detailed. When the lesion is only partial, the differences between dorsal lesions on the one hand and cervical or lumbar on the other, become much more apparent. This is very obvious if we consider that in the dorsal cord the gray matter and consequently the centers are very insignificant, the white matter or fibers composing almost the entire cord between the cervical and lumbar enlargements.

A lesion in the lumbar region, involving the lumbar enlargement, causes loss of motion and sensation in all parts below, loss of control over the bladder and rectum, and loss of the superficial and deep reflexes. It must be understood, of course, that the symptoms here detailed are only the immediate ones; the secondary symptoms, such as atrophy and the like, will be mentioned under the head of secondary symptoms. The following cases may be mentioned as illustrative:

CASE III.—A male, aged twenty-three, was crushed by a bank of earth falling upon him. There was no external injury of note. There was entire loss of motion and sensation below the level of the first lumbar vertebra, and loss of control over the bladder and rectum. There was no loss of consciousness at any time. The superficial and deep reflexes were abolished. The temperature on the day of admission to hospital, which was the day of the injury, was 102° F.; it remained at this point for five days, then sank to normal and did not rise again until just prior to death. Bedsores of a trophic nature developed in the gluteal region, and cystitis was also a later complication. The patient was admitted March 26th, and died rather unexpectedly May 15th. The autopsy showed that the last dorsal and first lumbar vertebræ were crushed and dislocated forward, compressing the cord and reducing it to an almost empty sheath.

CASE IV.—A male, aged fifty-two, fell nine or ten feet into the hold of a vessel, striking upon his back and side. There was no loss of consciousness and very little pain, but there was instant paralysis of the lower extremities. Examination showed a scalp-wound, but no fracture of the skull. There was a marked projection of the tenth dorsal vertebra. There was total loss of power in the lower extremities and loss of sensation below the umbilicus.

Bladder and rectum were both paralyzed. Cystitis, together with bedsores of a trophic nature, developed, and the patient died September 10th, having been admitted August 25th. The autopsy revealed a fracture of the tenth dorsal vertebra, greatly compressing and crushing the cord.

Injury to the *conus medullaris* causes paralysis of the bladder and rectum and anesthesia in the gluteal region. Such cases are not very common. The symptoms detailed and cases related are applicable only to total or nearly total transver e lesions, conditions in which the functions of the cord at the level of the injury are entirely abolished. It often happens, however, that the injury does not involve the entire thickness of the cord. In this latter case the symptoms present wide variations. Sensation may be greatly or very slightly affected, and all grades of paralysis may exist. A partial lesion in the mid-dorsal region may not involve the sensory conducting-fibers to any appreciable extent, and the lower centers, as those for the bladder and rectum, may be intact. Motion in such a case as

this would be interfered with to a moderate degree only, or more or less entirely lost.

We may have one lateral half of the cord interfered with, giving Brown-Séquard paralysis: motion lost on the side of the lesion, sensation on the opposite side. In the cases in which the lesion does not involve the entire thickness of the cord, the patellar reflex is as a rule greatly exaggerated, unless the lesion be in the lumbar enlargement, when, of course, the knee-jerk is lost, because the center is involved and the reflex arc is broken. In those cases in which the cord is entirely severed, even though the lesion is in the cervical or dorsal region, the patellar reflex, as Bastian has pointed out, is lost and we have a flaccid paralysis. A case recently under my care showed the curious combination of entire loss of motion and sensation in the lower extremities, with greatly exaggerated reflexes and ankle clonus. The only explanation of such symptoms that can be given is that the cord was involved in almost its entire thickness, having intact only a few white fiber-tracts, probably the direct cerebellar columns. It must be borne in mind that occasionally the nerve-roots only are involved, without any injury to the cord: the local nature of the symptoms renders the diagnosis easy, as a rule.

In considering the cases in which only moderate injury is done to the cord, a question of great interest arises, namely: To what extent may the cord be injured by blows, falls, and the like, which do not cause fracture or dislocation of the vertebræ? We may, I think, have three varieties of cord-injury resulting from external violence which has not been sufficiently great to cause any rupture of the bony parts: laceration to a moderate degree, compression from hemorrhage due to rupture of the spinal veins, and finally, a general disturbance of nutrition, without any immediate alteration of structure or marked symptoms, the condition known as concussion proper. The following case will illustrate the first variety, or moderate laceration without any fracture or dislocation of the vertebræ:

CASE V.—A female, aged twenty-two, on July 25th fell through a skylight to the floor beneath, a distance of fourteen feet. There was no loss of consc ousness and but little shock. Examination showed a bruised and somewhat tender spot in the lumbar region, but no evidence of fracture or dislocation.

The temperature was normal, as also were the pupillary reflexes. There was complete paralysis of the lower extremities and of the bladder and rectum. The deep and superficial reflexes, from the waist down, were abolished. There was anesthesia of the gluteal region and of nearly all the surface of the lower extremities. The patient has slowly improved, and at present, nearly six months after the injury, has recovered to some extent the use of her right leg. The left leg is still nearly powerless, and shows marked foot-drop, and only partial return of sensibility. The reflexes are very feeble.

The second variety of compression by intra-spinal hemorrhage without fracture is interesting, and has been confirmed by surgical operations for the relief of the pressure occasioned by the hemorrhage; the bleeding generally is found to come from the rupture of the spinal veins. The following case might perhaps be included in this category.

CASE VI.—A male, aged sixty-two, was crushed in an elevator. Several ribs were broken, but no distinct fracture of the vertebræ could be made out. There was no displacement of the vertebræ. There was almost total loss of motion in the lower extremities, with anesthesia extending to the crests of the ilia, and above this a very sharply-defined band of hyperesthesia. There was no elevation of temperature. The patellar reflex was abolished; the bladder was not paralyzed. Examination on the following day showed that the hyperesthesia had disappeared, and in a few days motion and sensation began to return and the patient was discharged cured at the expiration of two weeks. The deep reflexes had not returned when the patient left the hospital.

The third variety of injury to the cord, without fracture of the vertebræ, or any evidence of gross lesion, is that condition known as concussion of the spine. The limits of this paper do not permit any discussion of this interesting part of the general subject of injury to the cord. Ever since the appearance of Erichsen's notable paper, there have been bitter discussions in regard to the existence of such a condition. Unfortunately, the battle-grounds have been oftener in the courts than in the medical societies.

While a certain proportion of the cases of "railway spine" are fraudulent, or at least imaginary, and the symptoms stimulated by prospective "damages," there can be no doubt of the genuineness of many cases. Nor is the probable pathology hard to conceive. As we have seen, the cord may be injured severely by a blow or a fall that does not cause fracture or displacement of the vertebræ. Now, it would seem not improbable that a severe fall might seriously disturb the nutrition of certain parts of the cord, causing injury much less in degree than laceration or hemorrhage, which have already been considered.

As the result of a concussion, there might be sufficient injury done to the gray matter to initiate a degenerative process in the cellular structure, and, as a consequence, muscular weakness and atrophy in the parts depending for their innervation and trophic influence upon the cells in question.

Again, if the fiber tracts be even slightly injured, a myelitis may result and cause a more or less widespread secondary degeneration. Suppose an injury,

to the posterior part of the cord, by a fall, blow, or twist; the immediate effects of such an injury may not be at all marked, yet if there has been decided damage done to the fiber-tracts there will be an upward degeneration of the posterior columns, or the pathologic lesion of tabes dorsalis. The specimen shown of Case II. very beautifully illustrates this point. The injury to the cord was in the lumbar region, and the cervical cord shows most marked degeneration of the posterior colums, as can be seen from the section exhibited. This very marked degeneration has taken place in two months. In like manner we may have degeneration of the lateral, the direct cerebellar columns, etc.

It is, I think, quite possible that we have underestimated the importance of traumatism, in searching for some satisfactory etiology of the chronic system-degenerations or scleroses of the spinal cord. As a matter of fact, we have reports of cases pointing clearly to traumatism as their starting-point, and it is a common observation that an apparently trivial accident will often hasten and develop a case of incipient sclerosis.

The foregoing remarks sufficiently illustrate the nature of the changes of a secondary character that take place in the cord. As a result of these secondary degenerations, we have muscular atrophy, contractures, bedsores, cystitis, and like symptoms. Cystitis is especially troublesome and very commonly leads to secondary kidney-changes.

The diagnosis of these cases is not generally difficult, but, as Gray has suggested, it is always well to write out carefully all the symptoms, so that we may compare them with the tables given in the books and express the limits of the involvement of the cord in terms of the vertebræ.

The question of treatment in these cases of traumatic injury of the cord is an exceedingly difficult one to determine. As we know, we can expect little from medicine. Rest, counter-irritation, electricity, gold and silver salts, mercury, arsenic, and many other therapeutic agents are employed, but it is very questionable whether any of them influence in any degree the morbid processes. Undoubtedly, some cases do recover, but everything probably depends upon the degree of injury and the subsidence of the compression. The prognosis in those cases in which the cord is crushed and its whole substance destroyed is, if treated medically, absolutely hopeless. Such cases either die at once, or drag out a miserable existence through a few months and die of exhaustion from bedsores or secondary kidney-changes set up by the almost inevitable cystitis.

All we can do is to nourish the patient, to keep the bladder washed out, and to minimize as far as possible the evil effect of the bedsores, which nearly always occur, in spite of the most scrupulous care, and which, in most cases, must be regarded as trophic lesions. Such being the gloomy outlook in the medical treatment of these cases, we naturally turn to surgery.

It is out of place in this paper to discuss this part of the subject, but a few considerations as to the class of cases suitable for operation may be permitted. There is hardly any question about the propriety of operating when we have cases in which there are marked signs of compression, without evidence of total destruction of the cord. The main points to be regarded in making the differential diagnosis between partial and total destruction of the cord have already been considered. A considerable number of cases successfully operated upon attest the correctness of this position. If the compressing agency be removed early, the cord may recover in great part, but if operation is long delayed, secondary degeneration is likely to set in and interference to be rendered useless.

In those cases in which there is total destruction of the cord, most neurologists advise strongly against any operation as useless. It has always seemed to me that, in view of the fact that these cases practically always prove fatal under medical treatment, we should not advise against what would seem to be a natural surgical procedure. We have broken bone, crushing and compressing the cord, and the most natural thing would be to clear away the débris and give a chance to whatever bit of cord there might be left uninjured. Observations in a number of autopsies of cases that presented all the symptoms of complete crush of the cord have convinced me that it is rare to see the cord entirely destroyed by the traumatism, and in a considerable proportion of these cases there was distinct evidence that part of the damage was due to secondary inflammatory processes. Operative procedure offers not merely the best chance, but in nearly all of these cases the *only* chance, and if properly carried out does not materially add to the gravity of the prognosis, even if it accomplishes nothing. Abbe's brilliant work upon the cord, while as yet rather barren of results, is full of suggestion. As has been already noted, an operation, to be of any avail, must be done early. We should allow only time enough to make it certain that the symptoms are not due to shock or temporary interference with function. I know of no class of cases that more strongly appeal to me than these cases of injury to the cord, for I always feel instinctively that something ought to be done for them, and I am confident that the surgery of the future will make this possible.

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PULMONARY ATELECTASIS AS A CAUSE OF ANEMIA.

BY ALBERT ABRAMS, M.D.,
OF SAN FRANCISCO, CALIFORNIA.

IN this paper I shall discuss anemia, not as a substantive, but as a symptomatic affection. I have referred elsewhere[1] to cases of anemia occurring in individuals, the examination of whose lungs showed insufficient distention or atelectasis. Since then, my observations have been supplemented by accurate blood-measurements, which enable me to assert positively that atelectasis of the lungs is a frequent factor in the etiology of anemia. Atelectasis, or collapse of the lung, is often encountered as a physiologic condition, and I have adverted to it in my *Manual of Clinical Diagnosis*[2] as follows:

"Remembering that the tidal or breathing volume of the air amounts to only 33 cubic inches, and the complemental air, which is the air taken into the lungs by forced breathing, in addition to the tidal volume, amounts to 100 cubic inches, and knowing that the average respiratory capacity of an adult is about 225 cubic inches, the conclusion is evident, that even in a state of health the lungs are imperfectly aërated, and in a condition of *physiological atelectasis*.

"My invariable custom before conducting an examination of the lungs is to have the patient make repeated forced inspirations. In this way I avoid many errors in auscultation and percussion."

I have particularized this matter for the reason that I have failed to find similar detailed reference to physiologic atelectasis in our text-books on diagnosis. I can recall a number of cases in which an examination of the lungs revealed dulness at one or both apices, and in which an unfavorable prognosis was given, in accordance with the physical examination. I can also testify with chagrin that these very cases, which I consider so unfavorable, continued well, despite my inauspicious prognostications. These errors in diagnosis are examples of similar errors made by other physicians, and which will continue to be made until pulmonary atelectasis is recognized as a physiologic condition. I have repeatedly demonstrated patients to my classes in physical diagnosis who showed not only circumscribed dulness of the apices or borders of the lungs, but even, in fact, dulness of an entire lung; and it was shown in these cases how, after repeated forced inspirations, dulness was supplanted by resonance. These cases were not recruited from bedridden individuals, in whom such a condition might be expected, but from ambulatory patients. There is no individual, however resonant his lungs on percussion, who cannot render them more resonant after repeated deep inspirations. If atelectasis is found as a physiologic condition in robust individuals, how much more frequent it must be in those individuals with incomplete thoracic development, who forego all hygienic influences which tend to promote proper respiratory activity.

The occurrence of anemia, with its concomitant symptoms in pulmonary atelectasis, is not accidental, but almost constant. The blood is a definite living tissue whose chemical composition is almost constant. By means of the blood the constituent elements of the body are furnished with the nutrient substances and the oxygen they require; both are derived from without, the former from the alimentary tract, the latter through the lungs. The entrance of oxygen into the blood is necessarily influenced by the vascular area exposed to the air, which in pulmonary atelectasis is, of course, diminished. The excretion of carbonic acid from the blood must for the same reason be interfered with. Then, again, the excretion of organic matter during expiration is interfered with, the accumulation of which in the blood conduces to auto-intoxication.

The symptom-complex of individuals with collapse of the lung, based on an analysis of twenty-five cases, is as follows: Hemoglobin (estimated with Fleischl's hemometer) is reduced to 50 per cent., or lower; the red blood-corpuscles are diminished in number. The reduction of hemoglobin and in the number of red blood-corpuscles is proportional to the area of lung collapsed.

Fatigue on exertion, shortness of breath, palpitation of the heart, loss of appetite, and constipation, are the usual subjective symptoms.

On inspection, diminished movements of the thorax are noted. Percussion of the lungs shows diminished resonance throughout. The apices may show dulness on percussion, and circumscribed areas of dulness are often found in the interscapular regions, particularly on the right side. The upper lobe of the left lung, adjacent to the manubrium sterni, is a frequent seat of dulness.

Auscultation shows on quiet respiration an absence of respiratory sounds over the dull areas, while over the entire lung the respiratory murmur is enfeebled. When the patient is instructed to take deep inspirations, atelectatic crepitation is heard. The diagnosis is usually easy; repeated forced inspirations cause a disappearance of the dulness, and a reappearance of respiratory sounds. All of my cases showed almost immediate improvement after the inhalation of relatively compressed air by means of the pneumatic cabinet. The improvement in pulmonary atelectasis was phenomenally rapid, and occurred in some of the cases after three or four sittings. The color of the patients improved, the

[1] "Report of 163 Cases Treated by the Pneumatic Cabinet," Pacific Medical Journal, September, 1891.

[2] Abrams: Manual of Clinical Diagnosis, 1891.

percentage of hemoglobin and the number of red corpuscles increased, and the subjective symptoms of anemia disappeared.

If relapses occurred, and these were not infrequent, they were attributed in the main to neglect of lung-gymnastics, and a return to former modes of life. In a few cases nasal obstruction led to relapses. In this connection reference must be made to investigations of Holbrook Curtis,[1] who demonstrated that all patients with nasal stenosis are anemic, and after removal of the obstruction the cases were cured. In cases in which nasal obstruction cannot be removed, the simple expedient of having the patient breathe through the mouth may be adopted.

Although I have used the pneumatic cabinet for the treatment of pulmonary atelectasis, I am thoroughly convinced that no special apparatus is required if the patient is properly taught to make repeated voluntary forced inspirations.

In anemia of pulmonary origin the therapeutic action of chalybeates may be hastened by inhalations of oxygen. Oxygen is as essential an element of hemoglobin as iron. Sufficient oxygen for all practical purposes may be taken into the lungs, provided no atelectasis is present, and forced inhalations will prove of great value in the treatment of anemia, even when not of pulmonary origin.

Oxygen is now commonly used as a therapeutic agent in many diseases. The oxygen of the blood is chemically united with the iron, and is not subject to the law of absorption, and in consequence the exchange of gases between the blood of the air-vesicles occurs almost exclusively through the agency of chemical processes, and therefore independently of the diffusion of gases.

When pure oxygen is respired, the blood does not take up more oxygen than when atmospheric air is respired. Inhalations of oxygen, nevertheless, do good, and this good is effected, to my mind, not because pure oxygen is inhaled, but in consequence of repeated forced inspirations opening up normally collapsed lung-areas, and thus exposing a greater quantity of blood to the inhaled oxygen. The cachexia of individuals who suffer from cardiac valvular lesions is due largely to stasis in the lungs, the turgid vessels compressing the air-vesicles. It can be shown that the blood of these individuals contains less hemoglobin than normal, and that the hemoglobin increases when the collapsed lung is opened by voluntary forced inspirations.

I know of no more simple means of relieving the dyspnea of uncompensated valvular lesions under certain circumstances than by the inhalation of compressed air, the object being to dilate the collapsed areas of lung.

[1] Journal of the American Medical Association, August 3, 1890.

The following conclusions may be formulated:

1. Physiologic atelectasis of the lung is a frequent condition.

2. It may be readily diagnosticated by the presence of circumscribed areas of lung-dulness, which disappear after repeated forced inspirations.

3. Physiologic atelectasis of the lung is frequently associated with anemia.

4. In all cases of anemia of obscure origin, examination for physiologic atelectasis of the lung should be made.

5. Anemia due to physiologic atelectasis may be cured by inflation of the lungs.

6. Forced voluntary inspirations are an excellent substitute for inhalations of pure oxygen, and are of great value in the treatment of anemia from whatever cause.

ORIGINAL LECTURE.

ESOPHAGEAL STRICTURE AND GASTROSTOMY.[1]

BY ROSWELL PARK, A.M., M.D.,
PROFESSOR OF SURGERY, UNIVERSITY OF BUFFALO, N. Y.

THIS patient is a girl of eighteen upon whom, two or three years ago, I performed the operation of gastrostomy on account of esophageal stricture due to the swallowing of hot lye. At that time immediate operation was necessary, as the gradual contraction of the cicatricial tissue in the esophagus had progressed so far that even liquid nourishment could not be swallowed in quantities sufficient to support life. After a year or more I restored the patulousness of the esophagus by the electrolytic current and the passage of a sound, and then the opening into the stomach was closed. The most explicit directions were given as to the necessity of care in diet and of returning to the hospital to have the esophageal bougie passed often enough to prevent a return of the trouble. But, unfortunately, the girl is one of a considerable proportion of the population who are indifferent to the future and who lack perseverance. From sheer heedlessness she has twice allowed the esophagus to close, and twice we have dilated it again by means of sounds and the galvanic current. Every man who practises in a hospital has seen urethral strictures entirely overcome, has impressed on the patients as positively as he could the necessity of passing the sound occasionally to maintain the urethra in its restored patulousnenss, and yet has repeatedly seen such patients return with almost the original trouble, from neglect of the simple procedure of whose absolute necessity they had been warned.

This girl now returns with the request to have her stomach opened again, saying that she must work and cannot take time to go to a hospital or dispensary to have the bougie passed. She says, too, that she was more comfortable with the artificial opening in the stomach. While I may question her taste in the matter, I think that her own wishes, expressed positively and repeatedly, should be considered. I shall, therefore, reopen the stomach and allow her to return to the old *regimen;* and

[1] Delivered at the Buffalo General Hospital.

if, later, I can convince her of the propriety and desirability of keeping the esophagus patulous, and especially if she can be taught to pass the bougie herself, then it will be a simple matter to close the gastric fistula.

The operation in this case is an easy one. For years the stomach has been in contact with the abdominal wall and is firmly adherent to it. At the first operation of this sort, we have to open through the abdominal wall, find the stomach, draw it up to the wound and stitch it there, before opening into its cavity. Unless there is some emergency requiring haste, the completion of the operation is left until the next day, so as to allow peritoneal adhesions to form and thus prevent all possibility of leakage of chyme into the peritoneal cavity. In this case, the adhesions are already firm and nothing is required but an incision directly into the stomach and the insertion of the gastrostomy tube. We must distinguish between the words *gastrotomy* and *gastrostomy*. The former refers to an operation in which the stomach is opened and sewed up again immediately, as in removing a set of false teeth, a coin, or some other foreign body. By gastrostomy, we mean the establishment of a more or less permanent fistula. We have the same distinction between enterotomy and enterostomy.

The first time I operated to produce a gastric fistula was in the case of a woman with carcinoma of the esophagus, who was so weak that I was unwilling to give chloroform, and used cocaine—the first celiotomy ever done, at least in this country, under cocaine-anesthesia. Since then, I have repeated gastrostomy and have done two or three other celiotomies under cocaine. This girl is so hysterical that I prefer using chloroform in her case.

On the abdomen you see a scar, and in its center a star-like puckering which represents the original opening into the stomach. It is only necessary to cut through the scar, which bleeds very little, to reach the cavity of the stomach. The original operation has its little technicalities. The incision is made below and parallel with the left costal cartilages, beginning to the left of the linea alba; hemorrhage is controlled before opening the peritoneum and then the stomach is sought. Sometimes the colon presents, and I can imagine that the tenaculum might be hooked into it by mistake, but the difference between the two organs ought to be apparent. After drawing the stomach into the abdominal wound, it is held there by piercing it with a long, slender pin, like a hat-pin, which may be left *in situ* two days, and then the stomach-wall is at once sewed to the abdominal wall. For the second part of the operation, which, as I have told you, is usually postponed twenty-four hours or longer) no anesthetic, not even cocaine, is necessary, for the stomach is not provided with ordinary sensory nerves, and the incision occasions only a vague discomfort. This part of the operation may also be performed with the thermo-cautery. In gastrotomy for the removal of a foreign body, the stomach is drawn outside the abdomen and opened there so as to prevent the entrance of any of the stomach-contents into the peritoneum. The wound is then closed securely and the stomach dropped back, whereupon the abdominal wound is closed as in ovariotomy.

The wound here will be fitted with a tube having a shield like the collar of a stovepipe, to prevent its slipping into the stomach. It is to be held in place by a band about the body. The patient can wear a cork in the tube for the sake of cleanliness, and withdraw it whenever necessary to introduce food.

Two or three years ago Mr. Simons, of Guy's Hospital, devised a fairly practical way of introducing a tube into a constricted esophagus, to be retained for purposes of nutrition. His tube is analogous to the laryngeal tube of O'Dwyer, but, for anatomic reasons, it cannot be made of unyielding metal. You see here that it is a varnished silk and gum tube, funnel-shaped to prevent its slipping through the stricture into the stomach. It is worn for a few days, or weeks, until it becomes so far disintegrated as to necessitate removal. It is introduced by an obturator or universal handle, very much as the O'Dwyer tubes are inserted. A piece of strong silk ligature is attached, to facilitate removal. Probably no person, however enduring, would be able to have the silk hang from the mouth. Aside from the constant annoyance, it would be likely to be chewed off during eating, or unconsciously divided or swallowed during sleep. The thread is, therefore, drawn up through the pharynx and out of the nostril, and secured by a piece of adhesive plaster to the cheek. It may be necessary to remove such a tube after a day, or perhaps it may remain a month. It may be withdrawn and inspected and then reinserted. Solid food will not pass through such a tube, but strained broths, milk, porridge, etc., can be swallowed. The voluntary effort at swallowing is sufficient to carry the food to the point of stricture, and the presssure from above forces it down into the stomach. All such apparatus have their attendant disadvantages. Even a soft silk tube will cause more or less ulceration, and even dangerous hemorrhage may follow. The necessity for frequent removal of the tube is also a source of trouble and expense. The introduction of the tube involves additional danger. It is a simple thing to pass an esophageal probang in a healthy esophagus, but as soon as one reaches a stricture, the passage may become tortuous, or there may be ulceration on one side, and the instrument may be deflected from its proper course and may do serious damage. A London physician introduced one of these tubes into the esophagus of a patient of considerable influence in society, and sent him home, as he supposed, most satisfactorily ; but the patient died the next day, and at the autopsy it was found that the esophagus had been perforated and that the tube rested in the anterior mediastinum. That one fatal case did much to discourage London men from using this instrument. I have not yet seen the case that I thought just fitted for such treatment. I could use such an instrument in the case of this girl, but I could not trust her intelligence.

At clinic, eighteen days later. This patient, on whom you saw the operation of gastrostomy performed, is about the ward and is doing well in every way. I have brought her before you in order to show you the tube which she wears in the gastric fistula. It is an improvement on the one first introduced. There is an external shield with a broad flange, which prevents its slipping in, while an attached bandage keeps it from coming out. Inside the shield is a smaller tube, whose depth in the stomach is regulated by a set-screw which fastens it to the shield. The outer end is closed with a rubber cork, except when food is introduced, when the stomach-tube is connected with a funnel by a piece of rubber tubing.

CLINICAL MEMORANDA.

A CASE OF CHOLECYSTOTOMY, WITH RECOVERY AFTER REMOVAL OF GALL-STONES.

BY THOMAS G. MORTON, M.D.,
PROFESSOR OF SURGERY IN THE PHILADELPHIA POLYCLINIC; SURGEON TO THE PENNSYLVANIA HOSPITAL; AND TO THE ORTHOPEDIC HOSPITAL OF PHILADELPHIA, ETC.

MRS. X., of Yardleyville, Pa., aged fifty-eight years, for many years suffered with irregularly-timed attacks of pain in the right hypochondrium, which occasionally, also, shot into her shoulders, more especially the right. Otherwise she had been entirely healthy and without important medical history. She never was jaundiced.

On November 11, 1892, she was seized with one of her attacks, but this was of unusual violence and accompanied with marked prostration. Her temperature was variable, and fluctuated between 99° and 103°. The abdominal pain was intense, but the stools were normal and there was no jaundice.

I was summoned to a consultation with Drs. Joseph E. Smith and W. S. Gillam, of Yardley, Pa., November 18th, when I first saw the patient. At this time her temperature was 102° and she was suffering intensely. The pain was much aggravated by motion and by palpating the right hypochondrium. In this region was discovered a very large, somewhat globular mass, between which and the liver there was no line of percussion-resonance, but the dulness was continuous. The tumor was slightly movable toward the spine, but in no other direction. Fluctuation was not present, or could not be developed. The bowels were open and normal.

As her condition appeared to be threatening, and as it was stated that the tumor had been rapidly increasing in size, it was determined to make an exploratory incision over the tumor without further delay, and be guided, as to subsequent procedures, as circumstances might direct. Accordingly, a four-inch incision was made through the abdominal wall, in the right hypochondriac region, immediately over the most prominent portion of the tumor. When the peritoneum had been opened to the full length of the external wound, an intensely distended cyst presented itself to view and almost entirely filled the bottom of the incision. This cyst proved upon examination to be an enormously distended and thickened gall-bladder, in size and shape much resembling a large cocoanut. It was intensely congested and in spots appeared as if it were about to become gangrenous. Flakes of recent lymph appeared wherever it had come in contact with other parts. About an inch of very much attenuated border of the liver appeared in the upper portion of the wound; but the cyst ran under and far above this tongue. A finger was carried around the gall-bladder in all directions and it was found to be quite free from adhesions, save the recent flakes of lymph already spoken of.

It was now determined not to open the cyst-wall, nor to attempt to suture it into the wound, for fear that the contents—being under evident pressure and of unknown character—might leak out through the punctures before surrounding and protecting adhesions had formed. The peritoneum was accordingly sutured to the skin-margins of the wound all the way around the opening, and the wound-cavity thus formed stuffed lightly with gauze, it being observed that the distended gall-bladder, and in part the liver-substance, occupied and closed the opening into the peritoneal cavity, and formed the floor of the wound.

The subsequent course of the case was very gratifying. Her temperature fell to normal almost at once after the operation and she was entirely free from pain. No food was given for thirty-six hours, thirst being relieved by six-ounce hot-water enemata containing two drams of brandy, administered at frequent intervals. Subsequently, she was given two drams of the juice of slightly broiled beef, every two hours until the bowels moved, on the third day, after which ordinary diet was gradually resumed. The bowels were opened at this time by one-tenth-grain doses each of calomel and podophyllin, given every two hours, beginning on the second day.

The second stage of the operation was not performed until two days later. At the end of forty-eight hours the dressings were taken away and the gall-bladder was found now to be firmly anchored in the bottom of the wound by strong peritoneal adhesions, thus cutting off all access to the peritoneal cavity. Two silk stitches, with long ends for control, were then passed into the wall of the bladder, one at each side of the wound. As soon as this was done pus poured out in a little stream from each puncture—thus proving the wisdom of not having attempted suture of the viscus at the time of operation, for then it would have been almost impossible to have protected the peritoneum from infection by the discharges, either at that or a subsequent time, if that course had been followed.

After the controlling sutures had been passed, as above stated, the cyst, or gall bladder, was opened by a bistoury to the extent of two inches in a vertical direction between the sutures, traction upon which now held the opening into the bladder widely open and at the same time gave support to the walls when a finger was passed into the interior. The thin portion of the liver, above referred to was incised to the extent of half an inch in making this opening; bleeding from it was free for a few moments and then spontaneously ceased. When the finger was introduced it at once came upon a large gall-stone lying loose in the interior of the gall-bladder, surrounded by pus. When this was removed, another, almost as large, was encountered in the cystic duct. This was likewise removed with forceps, after having been dislodged by a teaspoon. Then another calculus could be felt further along the duct, and after it had been taken away a fourth was felt, at a distance of six inches from the external opening, encysted in the bladder-wall. Considerable difficulty was experienced in dislodging this stone from its deep and constricted position, but this was finally accomplished by means of a small, long-handled, ordinary teaspoon, and it could then be grasped by a long-handled volsellum guided by a finger. While the last two stones were being removed the woman complained bitterly that I was causing her just such "rheumatic" pains as she had been having in her stomach and shoulders for years. Besides the four large stones above mentioned there were also removed or washed out from the bottom of the cavity a very large number of smaller calculi weighing from a

fraction of a grain to twelve grains each. These smaller stones in the aggregate weighed about seventy grains. The dimensions were subsequently taken of the three larger stones, when dried—circumference four inches; another was three and one-quarter inches in circumference. The weight of the four larger stones was 815 grains, or 1 ounce, 5 drams, and 35 grains (52.8 grams).

The cavity was then washed out with recently boiled and cooled water, a large double drainage-tube put in, and a copious dressing of gauze gently packed about the opening.

On January 31, 1893, Dr. Gillam writes: "Mrs. X. began to improve immediately after the stones were removed. At no time since the operation did her temperature reach 100° and she had no bad symptoms. The discharge from the wound was almost pure bile, after the first few days, and the dressings would become saturated in three or four hours and have to be renewed. Once a day I syringed the wound out with a weak carbolized solution and there would be a number of calculi washed out; there were a few as large as a pea, but most of them were like grains of sand. These almost entirely disappeared after the first week." In another letter, he stated that the drainage-tube was taken out November 27th. "There had been a profuse discharge of bile and some pus, which at this period was much diminished."

In about two weeks after the operation the wound had closed so much that the syringe could not be introduced, but the bile continued to flow until December 23d, when it stopped. There was a very slight discharge of bile two days later—the 25th—but there has been none since. Previous to December 23d the bowels had been constipated and the stools light; but after that they became regular and natural in color.

The patient was allowed to sit up in a chair about December 15th, and on January 1st she came down stairs. There is still some tenderness about the wound but she has gained strength and says that now she "feels better than she has for fifteen years."

The treatment after the operation was very carefully conducted by Dr. Gillam. The cavity was daily washed out with antiseptic solutions and in three weeks nothing remained but a small fistula, through which large quantities of pure bile were discharged. This fistula narrowed and finally closed early in January, 1893. As soon as the biliary fistula closed the passages became darker in color and the bowels were moved naturally every day. Previously the stools had been light in color and only came away as the result of small doses of irritant purgatives.

Since the operation this woman has had entire freedom from the violent pains that with remissions she had exprienced for over twenty years. She states that she is thoroughly comfortable at all times and regards herself as perfectly recovered.

The Medical Association of Georgia.—The forty-fourth annual session will be in Americus, on April 19th, 20th, and 21st. *President*—A. A. Smith, M.D., of Hawkinsville. *Vice-Presidents*—Geo. J. Grimes, M.D., of Columbus, and Robert H. Taylor, M.D., of Griffin. *Secretary*—Dan H. Howell, M.D., of Atlanta. *Treasurer*—E. C. Goodrich, M.D., of Augusta.

A CASE OF ANEURISM OF THE AORTA, ASSOCIATED WITH INSUFFICIENCY OF THE AORTIC VALVES.

BY GEORGE C. SCHEMM, A.B., M.D.,
PHYSICIAN TO ST. MARY'S HOSPITAL, SAGINAW, MICH.

G. P., a male, aged forty-nine years, was admitted to St. Mary's Hospital January 3, 1893, seeking relief from a troublesome cough and hoarseness that had persisted for about three months. Otherwise he considered himself quite well, having been steadily at work up to the day of his entering the hospital. No very satisfactory history could be obtained, though, in a general way, it was ascertained that his health had always been good. The patient is at present free from pain; nor is there a history of pain during his illness. He is a well-built, robust man; his face is somewhat flushed, and the carotids can be plainly seen pulsating.

The laryngoscopic mirror shows the cause of the hoarseness to be paralysis of the left vocal band. During attempted phonation the left vocal band remains immovable in the so-called "cadaveric position," while the right advances normally to the median line.

On examining the chest we find the apex of the heart low down in the sixth intercostal space, quite an inch outside the mammary line. The impulse is heaving and extends over an unusually large area. The cardiac dulness is increased in proportion. The heart-sounds at the apex are normal, but over the aortic area a loud double murmur (systolic and diastolic) can be heard. This murmur is heard with even greater intensity along the left infra-clavicular region. Neither pulsation nor dulness can be detected over this area. When the patient assumes a recumbent position there is marked dyspnea and stridor. The right and left radial pulses are alike in time and character. The respiratory sounds are normal over both lungs.

When the larynx is grasped between the thumb and finger and elevated, a marked downward tug is felt with each heart-beat. No record was made of the relative size of the pupils.

From the physical signs in the chest the only conclusion to be drawn was that we had to do with a case of insufficiency of the aortic valves, with consequent hypertrophy of the left ventricle. This, however, was not sufficient to account for three important symptoms—the paralysis of the left vocal cord, the dyspnea in certain positions, and the tracheal tugging. Evidently there was pressure upon the trachea and upon the left recurrent laryngeal nerve, most probably, as it seemed, caused by an aneurism springing from the aorta.

From the time of the man's entrance into the hospital the condition remained about the same until the morning of February 16th, when he suddenly began spitting blood and in a few minutes dropped dead from hemorrhage.

At the autopsy only the chest-cavity was examined. On opening the chest the edges of the lungs were found overlapping the pericardial sac and presenting a glistening, congested hue. On incision, abundant frothy and bloody serum exuded. The heart was much larger than normal. The right ventricle was narrowed to a mere slit by the bulging walls of the left ventricle. The left ventricle was dilated and hypertrophied—the walls about an inch in thickness.

The valves of the heart were normal, with the exception of the aortic valves. These were studded with hard calcareous nodules, and were in parts rigid and shrunken. The aorta was much dilated, the walls irregularly thinned, and the intima covered with numerous calcareous plates. On the upper and posterior wall was an aperture about one-half inch in diameter, opening into a sac with soft, thin walls and about as large as a hen's egg. This sac was adherent to the left side of the trachea about an inch above the bifurcation, and at the point of adhesion the cartilage had become absorbed, the tissue softened and ulcerated, and perforation had taken place.

The points of special interest in the case are:

1. The presence of tracheal tugging.

2. The presence of aneurism of the aorta going on to perforation without physical signs.

3. The combination of aneurism with organic disease of the heart.

Much emphasis has recently been placed upon tracheal tugging as a diagnostic point in suspected aneurism of the aorta. McDonnell[1] describes the method of obtaining this sign as follows: "The patient is placed in the erect position and directed to close his mouth and elevate his chin to the fullest extent. The cricoid cartilage is then grasped between the finger and thumb, and by making gentle upward pressure the pulsation of the aorta will be distinctly felt transmitted through the trachea to the hand if dilatation or aneurism exist." From a study of twenty-five cases McDonnell draws the following conclusions:

1. Tracheal tugging does not occur in aneurisms that do not involve the transverse arch.

2. Tracheal tugging may be present when many other symptoms and physical signs are absent.

3. It is never present except in aneurism.

Dr. James Stewart[2] describes two cases in which this sign was present. Neither of them, however, came to an autopsy. He considers tracheal tugging a sign of the greatest value, and cites several writers whose experience is similar.

In the case I have described this sign was of especial diagnostic value, in the absence of dulness and pulsation over the seat of the aneurism.

The absence of physical signs of aneurism is easily explained by the course it took, springing from the posterior wall of the aorta, extending backward and upward and impinging upon the trachea. It did not touch the chest-walls, hence caused no physical signs. Nor is this a very unusual occurrence in aneurism of the transverse arch. It illustrates the remark of Broadbent (cited by Osler) that "the aneurism of physical signs springs from the ascending portion of the aorta; the aneurism of symptoms grows from the transverse arch."

Strümpell states that the association of aortic insufficiency and aortic aneurism is a not infrequent occurrence, and this we can easily understand, as both are the result of arterio-sclerosis.

The diagnosis is made from the diastolic murmur and the hypertrophied left ventricle, neither of which, in the opinion of most authorities, occurs in simple aneurism without disease of the aortic valves.

[1] London Lancet, March 7, 1891.

[2] International Clinics, vol. iii, p 92.

HOSPITAL NOTE.

A CASE OF UREMIA IN AN ALCOHOLIC PATIENT WITH VISCERAL COMPLICATIONS SUCCESSFULLY TREATED BY VENESECTION, DIAPHORESIS, AND NITROGLYCERIN.

Philadelphia Hospital.

Service of S. SOLIS-COHEN, M.D.

[Reported by W. E. Bruner, M.D., Resident Physician.]

J. S., an Austrian, thirty-six years old, was admitted to the Philadephia Hospital December 13, 1892. His family history was negative. He had had pneumonia when twenty years old. He confessed to gonorrhea, but not to syphilis. He had not had rheumatism, and had until recently considered himself in good health, although accustomed to have severe headache at times, and occasionally troubled with nausea. He has for years been drinking beer to excess, but not to drunkenness; and is short, fat, and heavy, with the typical flushed cheeks and bloated facies of a beer-drinker, even after edema elsewhere has passed away.

About eight months ago he was seized with severe pain in the lumbar region, which has gradually decreased until now it is only slight. For four or five months he has been obliged to pass urine several times at night. The urine is dark in color and small in quantity; micturition is attended with burning. For four months there has been shortness of breath, and for two or three months slight impairment of vision—in fact, the man says he was completely blind three weeks ago for a short time. Abdomen and feet began to swell about three weeks before admission.

On admission the patient was quite dyspneic, but not cyanotic. He was completely "water-logged"; the legs were markedly edematous, as were also the hands, arms, chest and abdominal walls, face, and conjunctivæ. Ascites was present to a considerable degree, and râles of edema were heard posteriorly throughout both lungs. The heart's action was feeble; percussion was not satisfactory, owing to the great amount of fat and the edema of the chest-wall. Auscultation of the heart was much interfered with by the loudness of the transmitted tracheal breathing. It revealed feeble sounds, as in dilatation, and with difficulty a mitral systolic murmur could be detected; the second sound was not accentuated. The urine, of which but a few ounces were passed, had a specific gravity of 1021, and was laden with albumin, which made more than two-thirds by bulk when the urine was boiled and then allowed to stand for twenty-four hours. Granular and broad hyaline casts were abundant. Ophthalmoscopic examination revealed a marked degree of albuminuric retinitis.

The man was placed at once upon cardiant diuretics: infusion of digitalis, with spirit of nitrous ether, supplemented after two days by sparteine sulphate and caffeine in small, frequently-repeated doses. Compound jalap powder was freely administered, and hot-air baths, aided at first by small doses of pilocarpine, were tried, but without inducing perspiration. The diet was restricted to milk. The mental condition was marked by stupor and irritability, and it was extremely difficult to get the man to take food or medicine.

On the 16th he had a general convulsion. When seen a few minutes later, his face was slightly cyanosed, the breathing was stertorous, the pupils were widely dilated, and head and eyes were turned to the left. Consciousness was completely lost. The vascular tension, as appreciable at the radials, was very high. Unfortunately the man was so restless that his temperature could not be taken. Three drops of croton oil were given at once, and twenty-four ounces of very black blood were withdrawn from the arm. Just as his arm was being bandaged he had a second and terrific convulsion; after the control of which, by inhalations of chloroform, the vein was at once reopened, and an additional half-pint of blood abstracted. The man then became wildly delirious. The lungs were filled with fluid, giving rise to moist râles; but, in spite of this fact, pilocarpine hydrochlorate, gr. ⅛, with sparteine sulphate, gr. ½, was given hypodermatically, and the steam-bath was started. The pilocarpine was repeated in an hour, with sparteine sulphate, gr. ¼, and the steam-bath was continued for three and one-half hours, with, however, but slight effect. Nitroglycerin (1 per cent. solution), gtt. 2, sparteine sulphate, gr. ⅛, and spirit of nitrous ether, fl ʒj, were given every hour during the afternoon and every two hours throughout the night.

On the following morning the patient was perfectly rational and very comfortable. The heart was acting more steadily, more strongly and less rapidly; the murmur was more readily detected, and the second sound was clearer. Hot-air and, later, steam-baths were given daily, aided by pilocarpine, gr. ¼ subcutaneously, or gr. ½ by the mouth; but it was several days before any marked effect appeared, when very free sweating took place.

On January 2d the patient was not so well. It had been decided to modify the treatment by giving alkaline diuretics with the sparteine and nitro-glycerin; but for several days he had been refusing to take his medicine, so that he got only what could be given hypodermatically, together with the baths. Urgent symptoms, however, had been absent. He was very nervous on this afternoon. His muscles were twitching and his hands jerking; his pupils were somewhat dilated, and he seemed on the verge of another convulsion. After a preliminary inhalation of amyl nitrite, croton oil was again administered, with pilocarpine and the hot-air bath; after which nitro-glycerin (gtt. 1 of a 1 per cent. solution) was given at first every half-hour, and then every hour.

On the following morning he was much better, and as he had considerable ascites it was decided to remove the fluid, and thus relieve the kidneys of that much extra work. Although some authorities advise against abdominal paracentesis under such circumstances, one hundred and ten (110) ounces of fluid were withdrawn, with no evil effect whatever, but with decidedly beneficial results. When the fluid had been removed, percussion in the right hypochondrium indicated smooth enlargement of the liver to a moderate degree.

Despite a severe attack of acute bronchitis, and later an attack of pleurisy, the patient has continued to improve. The edema has almost entirely disappeared, and the amount of urine in the twenty-four hours has increased to ninety ounces. Tested by heat, it contains about one-third its bulk of albumin. On several occasions the edema has rather rapidly increased; but pilocarpine and the hot-air bath, with the free administration of nitro-glycerin, in addition to his regular treatment by diuretics and cathartics, relieved the urgent symptoms. An attack of tachycardia, with a pulse of 170 per minute, was relieved apparently by strychnine sulphate hypodermatically. An asthmatoid attack was relieved by wet-cupping of the chest and hypodermatic injection of strychnine; on several occasions since there have been paroxysms of rapid breathing believed to be largely hysterical.

Present treatment consists of regulated diet, warmth, sparteine, caffeine, and nitro-glycerin, in alternation with Basham's mixture of iron and ammonium acetate, and purgation as necessary.

The noteworthy points in the case, as impressed upon the observer who saw it from hour to hour, and could compare its progress with that of other cases more or less similar in certain respects, are the prompt relief afforded by venesection in the first convulsion; the effect of frequently-repeated doses of nitro-glycerin in averting a second convulsion; the excellent result of abdominal tapping; the superiority of a combination of sparteine and caffeine in this instance to digitalis as a cardiant diuretic; the superior efficiency of diuretic mixtures containing nitrous ether over the same drugs unaided; the determination of the pilocarpine result to the skin and not to the lungs, notwithstanding the apparent counter-indication of pulmonary edema. Although caffeine was discontinued for a time during the period of cerebral manifestations, it is not believed that these can be ascribed to that drug. Its favorable influence since would seem to negative such a supposition. Of any single measure, venesection was the most useful at the moment.

MEDICAL PROGRESS.

A New Method of Rapidly Removing the Uterus.—At a recent meeting of the Kansas City Academy of Medicine, Dr. Emory Lanphear described a new method of abdominal hysterectomy. The abdomen and vagina having been carefully sterilized, an incision is made in the median line, terminating as close to the pubes as possible. The uterus, with one tube and ovary, is drawn to one side and a clamp is applied to the broad ligament, which is securely ligated half an inch beyond and cut through between the two. The procedure is repeated upon the opposite side. The uterus can now be lifted up into the wound and be easily separated from bladder and rectum. The incisions are carried anteriorly and posteriorly into the vagina, when the clamp of Kelly or that of Polk is introduced through the vagina and applied to the broad ligament as closely as possible to the uterus, and the opposite side is treated similarly, when the uterus is quickly cut away with curved scissors. The pelvis is irrigated and the abdominal wound closed, and drainage through the vagina provided for, as in cases of vaginal hysterectomy. The clamps are removed at the expiration of forty-eight hours. The operation can be performed in twenty-five or thirty minutes, and much more easily than vaginal hysterectomy with clamps. It is thought not necessary

to unite the bladder to the rectum, as union takes place just as quickly without sutures as with them.

Successful Operation for Incised Wound of the Heart.—MARKS (*Medical Fortnightly*, iii, 2, p. 44) has reported the case of a colored man, nineteen years old, who received a stab-wound of the left side of the chest and of the right arm. There was no vomiting of blood, and the urine presented no abnormality. With antiseptic precautions, the wound, which was situated over the ninth costal cartilage, to the inner side of the mammary line, and was an inch in length and directed transversely across the chest, was enlarged toward the median line for a distance of four inches, and the ninth and tenth cartilages, for a distance of an inch and a half, were removed. The pleura was found to have been perforated and air rushed in and out with the respiratory movements. The pleural cavity was filled with blood. The pericardium was also found to have been incised, and the wall of the heart contained an opening sufficiently large to admit about half an inch of the tip of the finger. The cavity was packed with gauze, the man was put to bed and hot bottles were applied. For about four days there was some acceleration of pulse and respiration and some elevation of temperature. Thereafter recovery was progressive. The patient arose from bed and walked about ten days after the reception of the injury, and was dismissed nine days later.

Abuse of the Milk-diet.—LECORCHÉ and TALAMON (*La Médecine Moderne; Wiener medizinische Presse*, 1893, No. 5, p. 180) call attention to the fact that, although milk is a perfect food, at least a gallon would have to be taken in the course of twenty-four hours in order to furnish a sufficient amount of fat, albumin, and carbohydrates. Few persons are able to take such large quantities for any length of time. A milk-diet may suffice for a person in bed, but it will not for an active person. The larger number of albuminurics are able to be about and a milk-diet must be employed as a medicament. Besides, it is not necessary that a milk-diet be persisted in in the remissions of the inflammatory process in the kidneys. When once the acute irritation has been allayed by means of a milk-diet and the establishment of polyuria has removed all danger of the accumulation of excrementitious matters in the blood, the continuance of a milk-diet cannot be expected to dissipate entirely the presence of albumin in the urine. A milk-diet is thus indicated in cases of acute nephritis, and during acute exacerbations of a chronic nephritis. It not only does no good, but it really does harm in cases in which the urine contains a minimal amount of albumin and the blood an excess of uric acid, perhaps in association with gout or in the train of acute infectious diseases.

Symphysiotomy in a Male.—ALBARRAN (*Le Mercredi Médical*, 1893, No. 4, p. 37) has reported the case of a man thirty-one years old, in which symphysiotomy was performed to facilitate the removal of a large recurrent epithelioma of the interior of the bladder. An incision was made in the middle line from about three fingers' breadth above the pubic joint to within a third of an inch of the root of the penis, from which diverged two other incisions, each about a third of an inch long, like the arms of an inverted Y. The tissues about the articulation were dissected away, the anterior wall of the bladder was protected from injury, and the joint was opened by means of a bistoury supplemented by a chisel and mallet. By flexing the thighs it was with gentle efforts possible to separate the pubic bones a distance of a little more than an inch and a half. When the bladder was opened it was found that there were two growths in the aggregate of the size of a mandarin. These, together with a trapezoidal area of the wall of the bladder, 2½ by 1½ inches, were removed. The bladder was closed by a deep layer of catgut sutures and a superficial layer of Lembert silk sutures. Hemorrhage from a plexus of veins necessitated a packing with gauze. The subsequent course of the case was entirely satisfactory. On the second day the packing was removed. On the eighth day a small amount of urine was found on the dressing. The small fistula closed after some time and the wound finally cicatrized perfectly. Four months after the operation the condition of the patient was in all respects excellent.

THERAPEUTIC NOTES.

For the Leukorrhea of Children.—

R.—Iodoformi . . . . . ℥j
Ol. theobromæ . . . . . ℥iv.—M.
Ft. suppositoria no. xvi.
S.—Introduce one, night and morning, high into the vagina.
Med.-Chir. Centralbl.; Rev. Int. de Thér. et Phar., i, 3

For Comedones.—(BLONDELL.)

R.—Pulv. rhataniæ rad. . . . ℥j.
Gummi tragacanth. . . . ℥ij.
Bismuthi subnit. } . . āa ℥iij.—M.
Pulv. acid. boric. }
Ft. pulv.
S.—Apply topically.
Rif. Med.; Monatsh. f. prakt. Dermatol., xvi, 4.

For Asthma.—

R.—Potass. iodid. . . . . ℥ij.
Tinct. scillæ . . . . f℥j.
Tinct. stramonii . . . f℥ij.
Ext. glycyrrhizæ fl. . . . f℥iij.
Spt. ætheris . . . . f℥j.
Aquæ . . . . ad f℥viij.—M.
S.—A tablespoonful in water every six hours.
The Practitioner.

To Deodorize Iodoform, Creasote, and Guaiacol.—The odor of iodoform, creasote, or guaiacol upon the hands can be overcome by washing with linseed meal. Articles having an odor of iodoform may be washed in tar-water to which oil of wintergreen has been added. The taste of pills of creasote can be disguised by means of a little powdered coffee. The odor of iodoform or guaiacol in rooms can be dissipated by burning coffee. —*Deutsche medizinal Zeitg.; Monatsh. f. prakt. Dermatol.*, xvi, 4.

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SATURDAY, MARCH 18, 1893.

MILK-STERILIZATION.

IN the year 1891, 5488 deaths occurred in the city of Philadelphia among children under one year of age. Of this number, 1000 died from cholera infantum during the three summer months; 1400 died from inanition and marasmus, and 700 more from convulsions.

Cholera infantum is mostly prevalent in hand-fed infants. In a careful study, ARNSTEIN shows the disease to be directly due to fermenting and decomposed milk. BOOKER has found the bacillus lactis aërogenes and the bacillus coli commune present in the stools of cases of cholera infantum, but not in the feces of healthy hand-fed children.

Many of the deaths attributed to convulsions and inanition are also probably due to the toxic influences of germs ingested with the food.

When we consider the manner in which milk is treated before it reaches the consumer, as well as the various contaminations to which it is subjected in its transit from the udder of the cow to the table, we should hesitate long and debate well, before using it in its crude state as a food.

Often the animals themselves are diseased. Besides, the dairyman may be unclean; the receptacles may contain hosts of germs; and after the milk leaves the farm, it is often carted about in filthy wagons, exposed to the dust of the streets, or dispensed from the counter of a badly kept shop. Under these circumstances there is but little chance for milk to retain its purity.

Ten per cent. of the milk examined by the city milk-inspector during the months of July and August, 1891, was condemned because of adulteration and dilution; but the chief source of danger, the disease-producing impurities, are beyond the ken of the lactometer.

Various sterilizers have been devised to render milk sterile; but when milk has become infected with noxious germs, only such a degree of sterilization will prove effective as will interfere seriously with the digestibility of the fluid.

When the spores of the butyric-acid bacillus are present, seven hours of continued boiling are necessary for their destruction. Pasteurization (*i. e.*, the heating of milk to a temperature of from 130° F. to 150° F. for ten minutes) only facilitates the germination of these microbes. Boiling destroys the solubility of the lime-salts, in the absence of which the child's stomach cannot digest the milk.

According to the standard of SOXHLET, milk intended as food for children should contain the normal constituents; and after it has been heated in a steam-chest for three-quarters of an hour, at a temperature of 212° F., it should remain sterile in a temperature of 95° F. for one month. It is only possible to obtain such milk when the methods in vogue in bacteriologic laboratories are carried out at the dairy-farm. Milk should be received from the healthy cow in sterile glass jars, which, with their contents, are placed in steam sterilizers and heated for ten or twenty minutes at a temperature of 160° F., and transported directly to the consumer.

Should the milk then sour in a shorter time than usual some detail must have been omitted, and the inspector will be called upon to make an investigation, as he now does in the case of adulterated milk. For the present, hospitals, dispensaries, and physicians should aim to control the source of milk-supply for their small patients, especially during the summer months, and endeavor to provide families with pure milk, properly sterilized.

If this is done generally, a great lessening in the death-rate among infants must result. Statistics show that this summer-mortality is not confined to any one section of the city, and that it is as high among the rich as among the poor.

To summarize: Sterilization of milk, to be effective without causing chemical changes, must be practised directly after the fluid has been obtained; care must be exercised in handling and transportation, so as to prevent contamination; warming the milk, as is now ordinarily done, will only hasten and aid germination of organisms present.

THE AMBLYOPIA OF DIABETICS.

MAN is a credulous being, and physicians are but men. It is much less troublesome to accept unquestioned the statements of one's predecessors than to go out of one's way to confirm their accuracy or demonstrate their fallacy. This spirit is responsible for the perpetuation of many mistakes of observation and of reasoning, and for the failure to establish many a truth. Thus, it has been believed that pulmonary tuberculosis does not develop in those that have valvular lesions of the heart, and especially mitral incompetency, or that have carcinoma, or that have emphysema of the lungs. These various illusions have, one by one, been dissipated by the light of modern investigation and research, leaving behind the element of truth out of which they were conjured. The dictum that the development of cataract is a common complication of diabetes mellitus has long been transmitted from teacher to pupil, and has received general acceptance. MAUTHNER (*Internationale klinische Rundschau*, vii, 6, 7), whose opportunities for observation at the Vienna Klinik have been unusually large, takes pains to point out that this association, far from being common, is extremely rare. His observations were not confined to his own ophthalmic practice, but included a study of a large number of diabetic subjects at Carlsbad. In most of the cases in which defects of vision were found these could be as readily attributed to concomitant conditions, such as age, impaired nutrition, and other intrinsic influences. The number of cases of diabetes mellitus in which cataract exists will, at best, be found to be exceedingly small. It is pointed out that the peripheral striation of the lens sometimes found in diabetics, and especially in the inferior median quadrant, is quite common, and becomes progressively more frequent in individuals that have passed the fiftieth year of life.

Among the influences that might be considered as favorable to the development of cataract are: The displacement of water in the fluids and tissues of the body by the presence of sugar; a diminution in the resistance of the walls of the bloodvessels as a result of the disturbance of the general nutrition; the development, as a result of the pathologic metabolism, of toxic substances that give rise to inflammation and degeneration; the marked marasmus; complicating or intercurrent affections. If the ocular changes were due to the loss of water, they should likewise occur in simple polyuria. It is more than doubtful that opacities of the lens result from the presence of sugar, for there is evidence that the lens normally contains sugar. The development of cataract in an elderly person whose urine contains sugar, does not constitute sufficient ground on which to make the glycosuria responsible for the loss of transparency of the lens, for it is known that in the large majority of cases of senile cataract the urine does not contain sugar. The conclusion is reached that the presence of sugar in the fluids of the eye does not lead to any disease of the organ of vision, and especially not to the development of cataract. In a small percentage of cases of diabetes mellitus, however, the excessive elimination of sugar and of water does lead to the development of cataract.

Vision may also suffer in cases of diabetes in consequence of the occurrence of hemorrhage as a result of the lowered resistance of the walls of the bloodvessels in the train of the nutritive disturbance. The hemorrhage may involve the intra-ocular apparatus; retina, choroid, vitreous, conjunctiva; or intra-cranial structures: optic radiation, nucleus of the optic nerve, of the motor, sensory (and trophic) nerves of the eye.

EDITORIAL COMMENTS.

Professional Abuses.—An eminent physician sends us a letter from which we reproduce some extracts:

"I know of some practitioners who advertise in the daily press; of others who are commercially connected with drug firms, and who require their patients to take their prescriptions to certain drug-stores; and still others who are furnished with offices, free of rent charges, by proprietors of drug-stores, in lieu of the prescription trade of such physicians. The professional gentlemen referred to sneer at medical ethics so long as their private interests are at stake. And as a result of this humiliating state of affairs, our city, if not the whole State, is infested with quacks, to suppress which there exists apparently no law; and, *pari passu* with this growing evil in itself, the regular profession, as a rule, walks arm-in-arm with quackery and lives royally on the general spoils, on the credulity of a patient public, of a suffering humanity, the victim ever of impostors on the one hand and of commercial regular physicians on the other."

Our correspondent proposed to prominent members of the local medical society to introduce a resolution whereby such offenders should be expelled from the society. He says:

"I was told by these gentlemen that this step would be a most unwise one; that it would be harmful to my personal interests, and that if brought before the society the resolution would be *downed* and sat upon! Indeed, some of these physicians have not been able to suppress their indignation, and have candidly or otherwise advised me not to introduce any such resolution."

Our correspondent proposes to go straight on in openly and persistently opposing such abuses, and we trust he will do so. The very men that find themselves reduced to such disgraces are often they who will thank the reformer they pretend to vilify for putting things to rights. Medical practice cannot permanently be reduced to such a basis, but the longer the degradation continues the more difficult it is to get back upon the everlasting basis.

Action of the New York Academy of Medicine as to Croton-Water Contamination.—Again the New York Academy of Medicine has performed a double duty to the public and to the medical profession. Its action is most excellent in condemning the proposal to give a man without the least training or knowledge of sanitary science, unlimited power to expend two or three millions of the public money in buying property and regulating the water-supply of the city. A committee of the Academy was named to go to Albany and to represent the views of the Academy against the pending bill.

But in setting an example to the medical profession lies the chief merit. Every local and every general medical meeting or society should not fail to follow the example set, and to express its views with dignity but with the most absolute clearness upon questions pertaining to the public health. Medicine is henceforth largely preventive in function. The cure of disease is no longer the physician's sole duty. Nothing will more speedily and certainly raise the profession to the position of public honor and power it should occupy than this decided interest and influence in all questions of public sanitation. The interest it has, but it is not exercised, because it has not spoken as a body; the power it may have—and it cannot help being a power for good—if it will awaken to what is at once its duty and its opportunity.

Further Note as to H_2O_2.—THE MEDICAL NEWS is always glad to learn, and if in error, to admit it. Since our recent remarks on hydrogen dioxid we have learned that the reason of the bursting of a certain lot of bottles made by one firm whose product, as analyzed by Dr. Leffmann, was found up to the claim of volume-strength, was not spontaneous liberation of O on account of excessive charging, as we had supposed, but from impurity from rubber stoppers, causing decomposition and liberation of O under pressure. This being now avoided by the use of corks, it appears that a solution of 15 volumes can be made that will for a reasonable time preserve its strength, if not contaminated by impurities and not subjected to mechanical agitation. Nevertheless, a 10 or 12 volume solution is more stable, and the strength more than ample for all purposes. The objection to highly acid solutions remains just as we stated it. These do no good, and in the throats of children do much harm. We desire, while on the subject, to emphasize the value of the internal use of H_2O_2 in pneumonia, phthisis, diabetes, gout, whooping-cough, and anemia.

Limit Papers to Ten Minutes.—The New York Academy of Medicine, and especially the section on Pediatrics, has found it an excellent plan to limit the time of reading of papers in medical societies to ten minutes. In large and crowded meetings the long sessions consequent upon thirty or forty-five minute papers become wearisome, and interest is bound to flag. By begining without excuses or preambles, by condensing the substance of the offering, and by ending when done, few or no papers would suffer by limitation to a ten-minute presentation. Explanations, notes, and details may, if desired, be printed, but busy men want the essence of the matter promptly and clearly. But whether ten or fifteen, or even twenty minutes, be allowed, let the rule never be broken to pass no vote to give a reader more time. If given to one for the sake of courtesy, it must be to others—with the result we all know!

Venesection.—An attentive reader of clinical reports and lectures must be impressed with the fact that the therapeutic pendulum is rapidly swinging toward a more frequent resort to bloodletting. Venesection is not practised indiscriminately or without sufficient indication; but its field of usefulness is being discovered and defined. The revival of humoral pathology has doubtless something to do with this, as one who might hesitate to abstract twenty or forty ounces of nutritive fluid, is not afraid to relieve his patient of that quantity of a poisoned serum. In uremia and in puerperal eclampsia, as well as in certain cases of pneumonia, the practice is rational.

Importation of Infected Rags.—Whether or not the motive of those in New York arousing the controversy as to the importation of foul rags from Europe sprang from commercial rivalry, the fact remains that, if the samples of rags given Dr. Gibier to examine were "genuine," there is a most decided danger of the importation of infectious diseases by means of the rags. The Government at Washington now having legal power in all such matters, we may hope that this danger may be carefully looked after, and proper preventive measures instituted.

The Protective Tariff and the Profession.—A contemporary journal would not have the tariff on microscopes, surgical instruments, medical books, etc., *too* high, but just high enough to give us "prosperous instrument-makers." Bosh! The profession exists to alleviate the physical sufferings of mankind. Every unnecessary increase of price of the physicians' tools makes the service so much more expensive either to the physician or to his patient. This result is against good morals and good medicine.

The Consolidation of Medical Colleges, proposed in Chicago, is also urged by the profession in Cincinnati. Such

movements are as inevitable as centralization of power in governments and of capital in commerce. It is indeed strange that the multiplication of medical colleges has been permitted to reach the outrageous degree today existing. If professors had not been allowed to own and use the colleges as money-making tools it could never have reached the present extreme.

England's Drink-Bill, for the year 1892, though nearly two millions of dollars less than in 1891, reached the preposterous sum of over $720,000,000, and it is probable that over half this amount was wasted by the working classes. What a terrible factor such an abuse is in the production of disease and death, is as much beyond question as it is beyond estimation.

The Salaries of Medical Professors, attached to the chairs of medicine, surgery and obstetrics in the Universities of Edinburgh and Glasgow are $3000. It is now proposed to reduce the corresponding salaries at Aberdeen University to the same figures. The men occupying these chairs are allowed to practise. The salaries in other departments are higher, but practice is forbidden.

Increase of Mortality from Carcinoma.—The proportion of total deaths due to carcinoma in England shows a steady increase. In 1838 it was 1 : 140; in 1850 it was 1 : 74; in 1860, 1 : 62; in 1870, 1 : to 54; in 1880, 1 : 40; and in 1890 about 1: 28. In Scotland, and, indeed, all over the civilized world, a similar rate of increase is shown by statistical returns.

Legacies to Physicians are not allowed according to the French law, if devised during the illness for which the patient is treated. It has, however, been lately decided that, though the attending physician is thus debarred, the consulting physician is not so forbidden. If the attendant is a possible murderer, why is the consultant not such also?

SELECTIONS.

SANITARY SUPERVISION OF SCHOOLS.

THE Local Government Board of England has recently issued a circular, which has been indorsed by the Massachusetts State Board of Health, and which may, therefore, be considered as authority and representative of the work of boards of health in this direction. The following are extracts from it:

"1. The diseases for which schools may be closed or children excluded are such as cause infection from person to person—scarlet-fever, measles, diphtheria, whooping-cough, smallpox, and rötheln, in order of relative frequency. More rarely the same question arises as to enteric fever and diarrheal diseases, which spread mainly by agency of local conditions—viz., infected school water-closets and outhouses.

"2. A universal principle is, that all children infected are excluded, however light the infection may be to others.

"3. As to mumps and skin diseases, school interests are to be considered more than in the other affections mentioned; but if these should spread by allowing children to go to school, the loss to children and school would be greater than to exclude the infected.

"4. Closure of schools is a grave step for sanitary authorities to take, and seldom should be undertaken except in an actual epidemic, nor then as a matter of routine nor unless there is a clear prospect of preventing the propagation of disease not to be attained by any other means.

"To decide, the fact of many pupils affected is not a reason; but if in a large majority of families the first case be a pupil, and especially if among families far apart and attending the same school, school should be closed, and if the infected cases can be *proved* to have attended the school.

"5. The medical officer should promptly notify the teacher of an infected pupil, and it should be kept from school the length of time the medical officer specifies. School officers should *promptly* notify health authorities of cases of contagious disease, no matter what *name* is used for the disease. Such officers during an epidemic should note any symptoms, such as shivering, headache, languor (especially if sudden), vomiting, rashes, sore-throat. During scarlet fever or diphtheria epidemics, any sore-throat is suspicious, and pupils should be excluded until safe assurance is given by a physician.

"6. Commonly the failure to stop the spread of an epidemic, especially among pupils, shows continued attendance of unrecognized mild cases, and school may have to be closed.

"7. A matter of importance in deciding as to closure is the opportunity for intercommunication of pupils outside the school. In small hamlets this is slight. In some sections of cities, as in tenement districts, more harm than good may be done by closing.

"8. All notices of proposed closure of schools should be sent to school managers in writing, the reasons given, and time of closure specified and made as short as possible, and a second notice given before the time for the expiration of the first, if closure is to be continued beyond the time specified in the first notice."—*The Sanitarian.*

MEDICINE AS A CAREER.

DR. J. S. BILLINGS, in a recent article on "Medicine as a Career,"[1] arranges the preparatory years of one who would fit himself for the medical life, as follows:

"My young friend whose attention I wish to direct to medicine as a career will have spent five years at a good intermediate school as a preliminary to entering the university, which he does when he is about seventeen years old. He has spent three or four years at the university, four years at the medical school, one and one-half years in the hospital, and two years in travel and special studies. When, therefore, he is ready to begin work he will be about twenty-eight years old, and his education, living, books, etc., will have cost about eight thousand dollars from the time that he entered the university. It can be done for less, but this is a fair average estimate."

If this imaginary young friend went to Harvard, he would be more nearly nineteen than seventeen on entering the undergraduate department; he would be about twenty-three on entering the Medical School

[1] Forum, February, 1893.

with an A.B. degree; he would be twenty-seven when he secured his M.D. degree; and if he spent eighteen months in a hospital and two years in travel and special studies, he would be fully thirty years of age when ready to begin the practice of an arduous profession, the first years of which are apt to be years of patient drudgery. For turning such years to profitable account, the hopefulness, the enthusiasm, the elasticity of youth are most essential. But at the age of thirty, for most men, the sun is already high above the horizon, the dew is off the grass, and the first freshness has gone from the morning air.—*Boston Med. and Surg. Journal.*

"POLITICS."

THE Academy has done more than merely throw the weight of its influence on the side of the advocates of national control of quarantine methods; it has asserted the principle that a scientific body owes the country active service as well as advice whenever its scientific knowledge may help avert a common danger or advance the common welfare. We say this without the slightest intention of committing the *Journal* to participation in the ostrich-like feeling of security that a national quarantine administration, even the best that can be devised, will prove all-powerful for the preservation of the public health.

For the Academy to degrade itself by adopting the "politics" of the slums or pursuing the methods of the corrupt lobbyist would surely be bad; but for it to refrain from exerting its power to the utmost in the cause of public safety would be far worse. If the most influential medical organization in the country refuses to advocate measures of great importance to the whole nation, for fear of becoming involved in "politics," that organization is disgraced in the eyes of all loyal citizens. The Academy cannot avoid taking part in "politics" in its higher meaning, and, if it does its duty, need not fear contamination from the baser sort of "politics."—*The New York Medical Journal.*

CORRESPONDENCE.

VENESECTION IN RIGIDITY OF THE OS UTERI AND IN ALLIED CONDITIONS THAT MAY RETARD LABOR.

To the Editor of THE MEDICAL NEWS,

SIR: THE MEDICAL NEWS of December 10, 1892, p. 656, and of January 14, 1893, p. 55, contains articles written respectively by Dr. Edward P. Davis and by Dr. J. J. Lamadrid on the treatment of rigidity of the os uteri in labor, in which Dr. Davis recommends surgical interference by incision of the os, and Dr. Lamadrid dilatation by mechanical means.

I have seen labor apparently advanced and terminated naturally by means of the fingers used as dilators; but, if rigidity still persisted, I have as often resorted to bloodletting, with such favorable results that I have, so far, had no occasion to incise the os.

On April 24th, at 3 A.M., I saw a primipara, twenty-two years old, well developed, and of full habit. The os was not dilated sufficiently to admit the index-finger. As she had slept very little during the night and the pains continued with no apparent progress, I gave her at 7 A.M. a dose of morphine, from the effects of which she rested at intervals for several hours, after which the pains became stronger and more regular. Still the os remained rigid and undilated until 3 P.M., when I bled her from the arm until she complained of faintness. Shortly after returning to bed her pains became more frequent and stronger; the os softened and began to dilate, and at 5 P.M. the child was born. There was no laceration of the womb or perineum, and mother and child did well.

On January 20th, at 7 P.M., I saw in consultation a primipara, thirty years old. Labor had commenced at 3 or 4 A.M. I found the os dilated about three-fourths of an inch; both its external and internal parts were hard and unyielding to the touch. Her pains were mitigated by chloroform, which she had been allowed to inhale for several hours. I proposed venesection, and as soon as she recovered from the effects of the chloroform sufficiently to sit up she was freely bled from the arm. The pains soon came on, and at 9.30 P.M. (about two hours after she was bled, during which time no anesthetic was given her) a living child was born.

These are two of a number of similar cases that I could report, and are selected only because the data are accessible.

Meigs, in his *Practice of Midwifery* (2d ed., 1842, p. 182), after due caution as to the amount of blood generally necessary to be taken, its effect on the pulse, etc., says: "But, on the other hand, where symptoms strongly threatening of apoplexy, convulsions, pulmonary hemorrhage, inflammation, etc., make their appearance, the lancet should be used in the most fearless manner. The same is true of those cases where a great relaxation of the tone of the tissues is required for some special and pressing object, such as the relaxation of a strictured vagina or a very rigid uterus, the removal of a violent congestive or inflammatory accumulation of blood in the brain, etc."

Rigby, in his *System of Midwifery* (American ed., 1841), recommends venesection as one of the remedies in rigidity of the os uteri, contracted vagina, stricture of the uterus, and in lying-in women with pleurisy or pneumonia.

Cazeaux, in his *Treatise on Midwifery* (American ed., 1868), in speaking of the treatment of "rigidity of the cervix" (p. 699), says: "Prolonged baths, employed from the beginning of the labor, and bleeding from the arm, if not contra-indicated by the general condition of the patient, are the only means which may be used under the circumstances." But in the next paragraph he says: "Still, if the labor should be extremely prolonged, and by its duration seems likely to endanger the life of the mother, it would be right to make a few incisions upon the lateral parts of the cervix." The same eminent author, under the head of "Spasmodic Contraction of the Neck" (of the uterus), after mentioning (p. 700) "forcible introduction of the hand and multiple incisions upon the neck," says (p. 701): "Bleeding, general bathing, and laudanum injections may be employed usefully under these circumstances also, though it sometimes happens that the contraction

of the internal orifice persists notwithstanding. Under these circumstances, should version be judged necessary, the most serious difficulty may be anticipated in passing the hand through the retracted part; and if the application of the forceps be deemed requisite, as it would if the head were already engaged, but delayed by the retraction of the internal orifice, this latter circumstance, by arresting the shoulders, would render the delivery impossible. It is then we must have recourse to the measures so much vaunted and so often employed by Dewees with success, namely, to bleeding in the arm pushed *ad deliquium animi*. But, in order to avoid drawing too great a quantity of blood, the patient should be directed to stand up, if possible, and as soon as fainting occurs, she is to be replaced on the bed, when, according to the American accoucheur, the relaxation in the retracted orifice, produced by the syncope, will be such that the pelvic version or the extraction of the head by the forceps can always be performed." Furthermore, Cazeaux (p. 701, *op. cit.*) says that "in a natural labor by the pelvis the retraction of one of these orifices may likewise arrest the head. Under such circumstances, if the source of difficulty is confined to the external one, numerous incisions might be made in the ring of the os uteri; but if it is at the internal orifice, Dewees's plan should certainly be followed." When the woman's general condition does not admit of bloodletting, Cazeaux recommends "opiates in full doses and inhalations of chloroform." Professor Meigs (p. 181, *op. cit.*) says: "Professor Dewees has been justly celebrated for the boldness and good judgment with which he resorted to bloodletting in some cases of labor."

Half a century has elapsed since the majority of the authorities quoted taught that venesection is beneficial in certain conditions of labor, but few teachers of the present day recommend it in obstetric practice. Dr. Davis, in his *Manual of Practical Obstetrics*, does not mention venesection in rigidity of the os and cervix, but speaks of bloodletting in puerperal eclampsia. On page 172, he says: "In apoplectiform cases, where plethora is excessive, bleeding may be practised with marked temporary benefit. No permanent benefit can be expected, as this expedient will not exercise more than a temporary influence over the patient." This is contrary to an experience in which, after bleeding *freely*, the convulsions cease, the os dilates rapidly, and the child is born in a surprisingly short time. Full and free bleeding is the *sine qua non* in puerperal eclampsia.

Such is the attitude of our obstetric teachers in regard to venesection that the general practitioner stands aghast at the mention of bloodletting under any circumstances, and, drifting with the current of fashion and public opinion, in our eagerness to discover some new or novel remedy or means to accomplish our object, we ignore the old and proved remedies.

If, as its advocates claim, venesection causes relaxation of the rigid os uteri and other parts of the genital organs sufficiently to admit of a speedy termination of labor, the inference follows that it may, to some extent, serve as a preventive of laceration of the womb and other parts of the genital tract, and, instead of making incisions into the womb in order to facilitate labor, thereby furnishing a wound for the gynecologist to close, or leaving it an open sore to act as a source of septic infection, carcinoma, etc., we may, by the simple and harmless process of extracting a few ounces of blood, prevent such dreadful results (first described by Emmet) as follow laceration of the womb and other parts. These remarks are scarcely applicable to those cases in which there is cicatricial tissue from old lacerations or from multiple incisions of the os in labor. Does it not seem inconsistent for the gynecologist to teach that a lacerated wound of the os uteri is the source of so much suffering and of untimely death to women, and the obstetrician to teach that it is our duty to produce numerous incised wounds of the same parts, and that we may do so with impunity? We would detract nothing from the wonderful discoveries by which all departments of medical science have advanced; but has the old process of childbirth advanced with these discoveries, so that what was advantageous in labor fifty years ago is useless or injurious now?

Venesection is one of the most rational and effective means at our command, not only in the class of cases under consideration, but in some inflammatory conditions—for instance, in acute pleurisy, which venesection will more speedily and permanently relieve than any other known remedy. The same is true of some cases of acute croupous pneumonia. How bleeding affects the diplococcus of pneumonia, we leave the pathologist to determine.

Respectfully,

J. E. COPELAND, M.D.

ROUND HILL, VA.

THE RELATIVE LOCALIZATION OF CARCINOMA IN FEMALES.

To the Editor of THE MEDICAL NEWS,

SIR: In an editorial in THE MEDICAL NEWS of January 7, 1893, p. 21, the following statement is made: "The statistics of carcinomata among women show that in about 70 per cent. of the cases the disease is located in the organs of generation, most frequently in the breast. In the majority of these cases, again, the patients are either unmarried or, if married, have never borne children, or so few as to fail to satisfy the normal tendency to activity in the organs concerned."

In Pozzi's *Gynecology* it is said: "Women are more subject to cancer than men, and it is the uterus which is most frequently attacked. This fact has been proved beyond doubt by J. Y. Simpson's statistics in the *Annual Report of the Registrar-General for England* of the years 1847–61. During the period which may be called uterine life of the woman their frequency is most manifest, that is, from puberty to the menopause, when it attains its maximum. After the uterus, the breast is most often attacked."

In the fifth edition of Thomas's *Diseases of Women* is the following: "Cancer is an affection of frequent occurrence, and is more frequently seen in the uterus than any other organ. According to Rokitansky the following average scale may be adopted as representing the preference of cancer for various organs: First, the uterus, the female breast, etc. Statistics prove that cancer is nearly three times more frequent in women than in men, and more than three times more frequently met with in the uterus than in any other organ of the female."

Pozzi says: "Local predisposing causes which have

been mentioned are laceration and metritis of the cervix. Mangin has made histological researches of great interest on the point. He also instances the effect of repeated parturition, but it is possible that this repetition acts only by the laceration and inflammation which are its consequences." Thomas says: "Cancer of the uterus is more frequently observed among multiparæ than nulliparæ. Of Scanzoni's 108 cases—

8	had been delivered	. . .	11 times
3	"	" . . .	10 "
14	"	" . . .	8 "
13	"	" . . .	7 "
21	"	" . . .	6 "
10	"	" . . .	5 "
3	"	" . . .	4 "

"The results of Mr. Sibley's investigation in the Middlesex Hospital go to prove this fact. He found the average number of children borne by women suffering from this disease was 30 per cent. in advance of the average of all marriages. With reference to uterine cancer, my experience certainly goes to sustain the opinion of Breisky, Emmet, and others, that epithelioma of the cervix very generally engrafts itself upon a laceration."

Which statements are correct—those of the editorial or those quoted from Pozzi and Thomas?

Respectfully yours, Adelaide Lambert.

263 Orange Street, New Haven, Conn.

[Opinions are divided upon the subject. Thus, in the last edition of Thomas's work, edited by Mundé (1891), p. 805, it is stated that "This disease (cancer of the breast) is exceedingly common, being, we believe, even more common in the female sex than cancer in that other favorite locality, the cervix uteri." We only stated our own belief.—Ed. News.]

ABORTIVE FREE CRUCIAL INCISIONS IN THE TREATMENT OF CARBUNCLE.

To the Editor of The Medical News,

Sir: The Medical News of February 11, 1893, p. 159, contains an article on "The Treatment of Carbuncle." I believe that, as a result of personal experience, I can improve upon the treatment given.

I have for some time been in the habit of making free crucial incisions, deep enough to expose all surfaces and tissues involved. After hemorrhage has been arrested I apply the following ointment:

℞.—Acid. salicylic.	2 parts.
Lanolin. (previously heated, but not melted)	2 parts.
Cosmolin.	1 part.

Misce sec. art. Apply morning and evening upon lint held in place by sufficient adhesive plaster to cover the entire indurated surface.

In this way I produce an open wound, and soon a line of demarcation will separate the dead from the living tissue. The "core" thus artificially formed becomes a foreign and inert substance, which can easily be dissolved and separated from the living tissues by a spray of a 50 per cent. solution of hydrogen dioxid. After this has been accomplished I treat the wound with antiseptic dressings.

By this method of treatment I produce abortion (without the time-honored poultices) and with great amelioration of suffering and pain.

I have used this mode of treatment in a large number of cases, and have experienced a speedy and early recovery. I find the salicylates to be good germicides.

Yours truly, A. C. Wentz.

Hanover, Pa.

NEWS ITEMS.

Association of American Physicians.—The preliminary program of the eighth annual meeting, to be held in the Army Medical Museum and Library Building, Washington, D. C., May 30, 31, and June 1, 1893:

The President's Address, by Dr. A. L. Loomis, of New York.

Discussion on Myxedema. Referee, Dr. F. B. Kinnicutt, of New York; co-referees, Dr. J. J. Putnam, of Boston, and Dr. M. Allen Starr, of New York.

"Sporadic Cretinism in the United States," and "Supplementary Report on Amebic Dysentery," by Dr. Wm. Osler, of Baltimore.

"Some Problems in the Etiology and Pathology of Texas Cattle Fever and their Bearing on the Comparative Study of Protozoan Diseases," by Dr. Theobald Smith, of Washington.

"Experiments with the Bacillus Diphtheriæ," by Dr. A. C. Abbott, of Philadelphia.

"The Parasitic Nature of Cancer," by Dr. Heneage Gibbes, of Ann Arbor.

"A New Pathogenic Bacillus," by Dr. H. C. Ernst, of Jamaica Plains.

"Gonorrheal Myocarditis," by Dr. W. T. Councilman, of Boston.

"The Prophylaxis of Cholera, with especial reference to Immunization," by Dr. E. O. Shakespeare, of Philadelphia.

"Creasote in the Treatment of Tuberculosis," by Dr. J. T. Whittaker, of Cincinnati.

"On a Simple Continued Fever," by Dr. G. Baumgarten, of St. Louis.

"The Treatment of Typhoid Fever," by Dr. S. A. Fisk, of Denver.

"The Intestinal Treatment of Chlorosis," by Dr. F. Forchheimer, of Cincinnati.

"Probable Origin and Early Symptoms of Certain Chronic Diseases of the Kidneys," by Dr. C. S. Bond, Richmond, Ind.

"The Reactions of the Urine with Ether," by Dr. A. H. Smith, of New York.

"A Study of Addison's Disease and of the Adrenals," by Dr. W. G. Thompson, of New York.

"Two Cases of Cystic Calculus," and "Two Cases of Diaphragmatic Hernia," by Dr. James Tyson, of Philadelphia.

"Subphrenic Abscess with especial reference to Cases which Simulate Pneumothorax," by Dr. A. L. Mason, of Boston.

"Subphrenic Abscess," by Dr. S. J. Meltzer, of New York.

"Sarcoma of the Lung, with Specimen," by Dr. D. W. Prentiss, of Washington.

"Pulsating Pleural Effusions," by Dr. Jas. C. Wilson, of Philadelphia.

"The Importance of Uterine Displacements in the Production of Vomiting during the Early Stages of Pregnancy," by Dr. G. M. Garland, of Boston. To be discussed by Drs. W. T. Lusk and W. M. Polk.

"Experimental Observations Concerning the Nature of Chorea," by Dr. H. C. Wood, of Philadelphia.

Paper (title to be announced later) by Dr. W. M. Polk, of New York.

The Fourth Section of the International Congress of Charities, Correction, and Philanthropy, to be held in Chicago in 1893, is to consider all matters relating to the commitment, detention, care and treatment of the insane. The Committee of Organization of the Congress has appointed Dr. G. Alder Blumer, Superintendent of the Utica State Hospital, Utica, N. Y., as Chairman of this Section, and Dr. A. B. Richardson, Superintendent of the Columbus Asylum for the Insane, Columbus, Ohio, as its Secretary, and has authorized and requested them to complete its organization, to extend invitations, and to prepare a program for its work.

The Section will hold five meetings of about two hours each, commencing June 12th, 1893, and will also have charge of one of the general sessions of the Congress, viz., that held on the morning of June 17th.

It is desired that this shall be a truly international gathering for conference on the subjects allotted to this Section, and all who are interested in the commitment, detention, care, and treatment of the insane, are cordially invited to be present, to contribute papers, and to take part in the discussions.

The papers and proceedings will probably be printed as a separate volume, and it is hoped that this will represent the best methods and the best work in each of these departments in all parts of the world.

In the selection of topics, those of international interest and utility should have precedence over those of a more local character; for instance, histories of the movements in which alienists the world over are interested, presentations of the actual status of work in behalf of the insane, in any of its numerous departments, and discussion of living questions, might fitly occupy the time and attention of the Section.

Persons desiring to present papers, or to share in the discussions, are requested to communicate with the Secretary at once. The period of time allotted for the preparation of the program is necessarily brief, and it is essential that all who are willing to assist in this work should act promptly.

Sickness and Mortality Statistics of the U. S. Navy.—The sick of the Navy during the year 1891 were 12,151, a decrease of 698 as compared with the previous year, when the number was 12,849.

The sick were distributed as follows: 7934 on vessels afloat and receiving-ships, 1733 in hospitals, and 2484 at navy yards and stations.

The daily average number of sick on vessels afloat and receiving-ships was 162.29, which was practically the same as the previous year, when it was 161.86. The average number of days each case was under treatment was 7.46, while the previous year the average was 6.86 days.

The total number of sick days of the force afloat and on receiving-ships represented a loss to the Government of 59,237 days, or an average of 162.29 men on the sick list daily. Of the 7934 patients on the sick list, 6968 were returned to duty, 727 were invalided to hospitals, 46 were discharged from the service, 41 died, and 152 continued under treatment at the close of the year.

The number of deaths during the year 1891 was 91, distributed as follows: 34 in the hospitals, 16 at the yards and stations, and 41 on vessels afloat and on receiving-ships, making a ratio of 7.91 in a thousand. These figures, as compared with previous years, show a very gratifying result, being the lowest death-rate in the Navy for many years, and which can be attributed to the absence throughout the year of casualties and epidemic diseases.

The death-rate for the year 1888 was 12; for 1889, 18; for 1890, 9; and for 1891, 7.

The Section on Therapeutics of the Pan-American Medical Congress.—It is the earnest desire of the officers of the Section on Therapeutics of the Pan-American Medical Congress that both specialists and general practitioners should contribute articles to its proceedings. Those desiring to read papers at this meeting should at once notify Dr. H. A. Hare, President of the Section, Philadelphia, of their intention, and should send him by July 10th abstracts of papers, in order that these may be translated into the three official languages of the Congress and published in the program.

The American Association for the Study and Cure of Inebriety will hold a special meeting at the hall of the New York Academy of Medicine, No. 19 West 43d Street, New York City, March 23, 1893, at 8 P.M. The subject for discussion will be "Specific Remedies for the Treatment and Cure of Alcoholic and Opium Inebriety." Short papers will be read by Dr. Norman Kerr, of London; Drs. Kiernan, Clevenger, and Moyer, of Chicago; Dr. Hughes, of St. Louis; Dr. Peterson and Clark Bell, Esq., of New York; Drs. Mason, Mattison, Mann, and Wood, of Brooklyn; Dr. Day, of Boston; Dr. Crothers, of Hartford; Dr. Russell, of Winchendon, Mass.; Dr. Quimby, of Jersey City; and others.

Suicides of the Insane in New York.—A typographical error occurred in THE NEWS of March 11th, p. 260. The number of suicides of patients in the asylums of the State of New York was given as 15 per cent. It should have been 15 per annum.

BOOKS AND PAMPHLETS RECEIVED.

Die Mikroörganismen der Mundhöhle. Von W. D. Miller, Dr. Med. et Phil., Professor am zahnärztlichen Institut der Universität, Berlin. Mit 134 Abbildungen im Texte und 18 Photogrammen. Zweite Umgearbeitete und stark erweiterte Auflage. Leipzig: Verlag von Georg Thieme, 1892.

The Anatomy of the Peritoneum. By Franklin Dexter, M.D. New York: D. Appleton & Co., 1892.

Manual of Practical, Medical, and Physiological Chemistry. By Chas. E. Pellew, E.M. New York: D. Appleton & Co., 1892.

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ORIGINAL ARTICLES.

DIPHTHERIA—A CLINICAL STUDY.[1]

BY WILLIAM P. MUNN, M.D.,
OF DENVER, COL.,
ASSISTANT PROFESSOR OF GENITO-URINARY DISEASES AND CLINICAL SURGERY IN THE UNIVERSITY OF DENVER; GENITO-URINARY SURGEON TO THE ARAPAHOE COUNTY HOSPITAL; PHYSICIAN IN CHARGE OF QUARANTINE, AND ASSISTANT HEALTH-COMMISSIONER OF THE CITY OF DENVER.

EMPHASIZING the importance of diphtheria and its perfect understanding by physicians, it is only necessary to consider for a moment its constant prevalence and its fatality, as shown by the mortality reports of all cities. In Denver, for example, it has, during the past five years, caused from five to ten per cent. of the total number of deaths. The following table gives the exact figures:

Year.	Total deaths.	Diphtheria deaths.	Croup deaths.	Per cent. of deaths due to diphtheria.	Per cent. of deaths due to diph. and croup
1888	1729	77	43	4.5	7
1889	1808	77	28	4.3	5.8
1890	2530	210	50	8.3	10.6
1891	2118	145	30	6.8	8.25
1892[2]	1578	75	9	4.75	5.3

A rough estimate of the percentage of fatal cases may be made from a consideration of the number of reported cases of sickness and the number of deaths. There were 440 cases of diphtheria reported during 1891, with 145 deaths, a mortality of 33 per cent.; adding croup there were 470 cases, with 175 deaths, a mortality of 38 per cent. During the first eleven months of 1892 there occurred 281 cases of diphtheria, with 75 deaths, a mortality of 26 per cent.; or, adding croup, there were 290 cases, with 84 deaths, a mortality of 29 per cent. The limits of this paper prevent any proper consideration of sanitary precautions for the prevention of diphtheria, which will be reserved for a future time.

The recent literature of diphtheria all tends toward a more certain understanding of its nature and more definite objects to be attained by treatment.

Jonathan Hutchinson voices the opinion of ultra-conservatism when, admitting the weight of the facts in reference to germs causing this disease, he says that he "is not yet convinced that they cause it." Bacteriologic investigators, on the other hand, are ready to prematurely credit the clinical phenomena to one germ only, and to call only those cases in which it is present "true diphtheria"—classifying all other cases, though clinically similar and equally fatal, as "pseudo-diphtheria," or as some other variety of anginose condition.

It is not unreasonable to assert that similar pathologic and clinical phenomena may be caused by a number of different organisms, existing separately or in company. No one of these germs is to be regarded as the sole and specific organism; one may be less malevolent than the other; but the disease which it causes is clinically indistinguishable from that due to the other germ—it is equally contagious; the malevolent condition may at any time be added to the benevolent form; therefore, the disease is diphtheria, and is to be so classed for treatment and for hygienic precautions.

A fairly accurate definition is this: The disease-process or combination of processes known to us as diphtheria is both infectious and contagious. Its cause is an albuminous material of intensely poisonous character resulting from the growth, usually within the body or upon one of its surfaces, of any of the following microörganisms: 1, the bacillus diphtheriæ of Klebs and Loeffler; 2, the streptococcus diphtheriæ of Prudden; 3, a simple micrococcus resembling that described by Roux and Yersin.

These germs and the products of their activity give rise to a series of clinical phenomena so similar as to be practically indistinguishable. The ordinary genesis of the disease is probably as follows: 1. The germ obtains lodgment upon some mucous surface of the body, most usually in the upper respiratory passages, as a rule upon the posterior pharyngeal wall, in the palatine folds, on the tonsils, or in the nose (these localities are named in the order of frequency of primary involvement), and less frequently in the larynx. 2. The germ finding suitable pabulum grows and multiplies theron, and, as a result of its growth, the toxic albuminous body characteristic of the disease is formed and set free. 3. A series of local pathologic changes then occur, as follows: The epithelial covering of the mucous membrane is devitalized and cast off, and almost coincidentally a fibrinous exudate occurs, which, according to the

[1] A paper read before the Denver and Arapahoe Medical Society, December 13, 1892.

[2] First eleven months.

rapidity of its formation, may or may not hold the dead epithelium in its meshes, and according to the concentration and virulence of the toxic albumin or "toxin," may or may not invade the basement membrane and deeper tissues underlying the mucous surface. 4. From this distinctly local disease-focus there now occurs absorption of all of the products of the pathologic processes there occurring; the toxic products of the diphtheria-germ (bacillus, streptococcus, or micrococcus, as the case may be) are accompanied into the blood and into the lymphatics by the toxins of those other swarming microörganisms which, as a rule, coexist, and which multiply readily in the necrotic tissues; sometimes the germs themselves find their way into the circulation, infecting both the blood and distant organs and structures.

As a result of this systemic invasion there occurs, usually, although not with absolute regularity, general malaise, anorexia, perhaps nausea and vomiting, rise of temperature, increased pulse-rate, lowered blood-pressure, and weakened heart-action; the excretory organs may be affected in a manner ranging from absolute stimulation to complete paralysis; the bowels are usually inactive. These clinical features are far from constant, and some of them are of little significance as compared with their relative importance in other diseases. Thus, in my experience, the rise of temperature means almost nothing in diphtheria, while the circulatory changes are of supreme importance. Certain of the clinical changes are of greater or less intensity and of greater or less importance, according to the saturation of the system with pathologic products other than the specific toxins of diphtheria. It is certain that these other products, originating in a necrotic process are identical with those of ordinary septicemia; the clinical phenomena are exactly similar to those of ordinary septicemia, and emphasize the point which is of so great importance in reference to a proper understanding of the nature of diphtheria and its proper treatment, viz., that it is a septic disease. Or, perhaps a more accurate expression of the fact is that diphtheria pure and simple, a result of intoxication of the system with diphtheria-germs or their toxic albumins, is almost invariably accompanied by septicemia due to the absorption of other septic and necrotic products.

As already stated, the febrile conditions are not constant; neither are they found to exist coincidentally to such an extent as in other diseases; *e. g.*, the temperature may remain constantly normal or subnormal, while the pulse will range from 120 to 160 per minute. Then the rapid pulse of diphtheria is almost never full and bounding, but is almost always weak and compressible, often thready. Even when febrile conditions are marked there is a strange absence of delirium; in fact it is often noted that patients, especially children, suffering from fatal forms of diphtheria are rational up to the moment of death, thinking, speaking, and planning in the most connected and sensible manner, and, as a rule, recognizing the approach of the great change and absolutely welcoming it. When the septic conditions are most intense, coma occurs. It has been determined that coma is probably due to an albuminous body existing in the germ and not formed as a result of its growth. This body is acid in reaction, of the nature of a protein, and differs radically from the toxins. The manner in which this body is set free—if it is set free—and the way in which it acts—if it does act—to produce the characteristic coma of diphtheria, are not as yet known. I am inclined to think that the further study of this problem and of the reciprocal actions and physiologic influences of these organic bodies may yet yield information of value in regard to the development of the antitoxin of diphtheria.

Returning, however, to the local lesion, which is worthy of extended observation and investigation, usually described and often existing as a yellow or grayish-yellow membrane, I have observed it more frequently in the beginning as a pearly-gray pellicle of extreme tenuity, often simulating the condition due to edema of the mucous and sub-mucous tissues. At other times a tiny patch resembles muco-pus filling a crypt in one of the tonsils, or hidden in the palatine recess, from which as a center it spreads quickly. Again, a slender, filmy, gray line appears first, crossing the tonsil at an irregular angle or hidden in one of the faucial folds. A favorite location is the posterior surface of the naso-pharynx, where the germ is really most likely to lodge, impinging there at the point from which the incoming air-current is deflected downward. The beginning membrane is not readily discovered at this point, being hidden from view by the soft palate. Vocalization and the coincident rise of the palatal curtain will often reveal a hitherto hidden patch of membrane.

The rapidity of the extension of the membrane is quite variable. In some few cases the first-observed patch, film, or line, will remain stationary and of doubtful character for as long a period as thirty-six hours; more usually it spreads, so that in twenty-four hours an area of one or two square inches is covered; while more rarely it increases with alarming rapidity in the course of a few hours, so that a spot which in the early afternoon seemed insignificant or of doubtful character has by early evening become a dense necrotic mass, filling the whole of the fauces, obstructing the posterior nares, preventing deglutition and interfering with respiration. The little patient sits up in bed with the mouth open, partly for facility in respiration, partly because the

swelling of the tonsils and cervical glands has become so great and so painful as to prevent the closing of the jaws. Thus in a few hours the local condition may become so serious as to endanger life, even although the systemic invasion has not yet been great. Cases of this class are, as a rule, rapidly fatal. The membrane thus early obtaining vantage-ground, extends rapidly both upward and downward, the nose becomes filled with a dense fibrinous mass, totally occluding its caliber and of such consistency that it can with difficulty be bored through with an ordinary probe; laryngeal stenosis occurs early, and the patient dies in less than seventy-two hours, regardless of the means adopted for relief. Intubation and tracheotomy seem to be equally valueless in these overwhelming cases, for after the first twelve hours the absorption of toxins and of septic material from the great necrotic mass covering and filling pharynx, nose, and larynx, is so great and so rapid that the blood is practically disorganized, the nervous system overwhelmed, the heart enfeebled beyond aid, and death is almost inevitable.

Rapid membrane-extension, such as is here described, is probably dependent upon three causes; (*a*) intensity or virulence of the poison, which may be due to high vitality or activity of the germ or to an especially favorable medium existing for its growth, the secretions of the individual being at the time in condition to furnish a good cultivation-fluid; (*b*) erosion of the epithelial covering of the mucous membrane; this condition may pre-exist or may be furnished at the time by ill-advised local medication with remedies which devitalize the epithelial cells and thus denude the mucous membrane; (*c*) idiosyncrasy of the patient. In some families, diphtheria occurs at periods remote from each other, the hygienic conditions differing at each time, but the type of the disease in the family is almost invariably the same, and the patients almost invariably die. The members of some families possibly have a lowered resisting power, both of the local cells to the germ, and of the system to the poison. The recurrence of the malignant type of the disease in some families can only be explained by some such supposition. I have observed that the members of such families, while otherwise perfectly healthy, seem to have a tendency to catarrhal inflammations of the mucous membranes of the digestive and genito-urinary tracts as well as of the respiratory passages.

The usual factors of fatality-causation in diphtheria may be stated as follows:

1. Extensive involvement of mucous surfaces.

2. Rapid absorption of disease-products and consequent constitutional poisoning.

3. Laryngeal stenosis.

4. Pre-existing conditions that lessen the resisting power of the system.

Practically, the second and third factors are dependent upon the first, viz.: Extensive involvement of mucous surfaces; and the preponderating influence of this factor in causing death is very forcibly shown in the following analysis of cases in which I have preserved a record of the extent of membrane-formation.

CASES NOTED—128.

Location of membrane.	No. of cases.	No. of deaths.	Per ct. dying.	Per ct. of all.
Fauces only	44	1	2	34
" and palate	29	1	3.5	23
	73	2	3	57
Fauces and tongue	3	0	0	2
" and nose	24	4	16.67	18
" and larynx	2	2	100	1.67
" nose, and larynx	15	12	80	11
" " larynx, and ears	1	1	100	—
" " and eyes	3	2	66	—
" " larynx, eyes, and ears	1	100	2	—
" " and bowels	1	1	100	—
Palate only	2	0	0	—
Tongue only	1	0	0	—
Membrane not visible	2	0	0	—
	128	25	19.5	
Nose involved	45	21	47	35
Larynx involved	19	16	84	15
Eyes "	4	3	75	3
Ears "	2	2	100	—
Bowels involved	1	1	100	—
Cases not treated	11	7	64	—
" treated	117	18	15 33	—

The causes of death were as follows: Septic intoxication, 8; laryngeal stenosis, 7; cardiac paralysis, 6; hemorrhage from the bowels, 1; suppurative nephritis, 1; unknown, 2; total, 25.

In the one hundred and twenty-eight cases, operative interference on account of laryngeal stenosis seemed to be demanded, and was proposed, in nine cases. Five declined operation, and all died, three of the stenosis and two of septicemia. One accepted, but operation was deferred, and ultimate recovery ensued without it. Three were operated upon, two by tracheotomy and one by intubation, and all died. Each of these patients was practically moribund before operation was permitted.

It will be noted that only three laryngeal cases recovered, and that of the fatal cases, all but four had nasal and all but nine had laryngeal involvement. That this fatality is largely due to the extent of membrane from which absorption can take place is evidenced by the fact that only seven deaths occurred from a local cause (laryngeal stenosis), while sixteen deaths were due directly or indirectly to septic conditions.

In only five cases, or four per cent. of the number of which notes were preserved, were the fauces free from membrane; in two of the five, no membrane

was visible at any time; in two it appeared only on the hard palate; and in one it was visible only under the tongue.

Of eighty-one cases in which membrane was limited to the fauces, the palate, and the tongue, but two died; while of forty-seven cases in which the nose and larynx were involved, twenty-three, or forty-nine per cent. died. Of nineteen having laryngeal membrane, seven died of stenosis; deducting these, we find that nine of twelve died of septic intoxication and cardiac paralysis, conditions due directly to the absorption of material from the local disease-focus. Of the nasal cases, twenty-one of forty-five (or forty-seven per cent.) died, a somewhat lower rate on account of the greater accessibility of the nasal cavity to treatment, but still a large number of deaths.

The four cases in which the membrane is recorded as appearing on the tongue are of special interest. The first was in a child two years old; the disease was ushered in by a severe convulsion, during which he bit the tongue almost in two. The membrane developed on the wounded surface and on the dorsum of the tongue. The other three cases were all in adults and all in one family; the membrane was a well-defined persistent patch under the tongue. Each of the patients had previously nursed a patient ill with the disease, and, although warned of the danger, persisted in reading books and magazines that had been in the sick-room from the beginning of the illness in the house. They had the habit of moistening the thumb under the tongue, preparatory to turning the leaves of the book. All four patients recovered.

The four cases in which the eyes were involved were of especial interest, as the process seemed in each case to spread through the lachrymal duct. Three of them died when the palpebral conjunctiva had been invaded; the fourth one recovered, affording me the undesirable opportunity of observing the progress of the destructive processes in both eyes. The left eye was first involved, membrane-formation having evidently taken place already in the duct, which was occluded from distention of the sac. The lower lid and then the upper one was invaded, followed by the ocular conjunctiva, which was rapidly covered, the membrane advancing with rapidity from periphery to center, suddenly choking off the nutritive supply of the cornea and causing it to slough forty-eight hours after the first invasion of the eye.

The sequence of events as observed on the conjunctiva of the lids was as follows: An intense hyperemia, then, twelve hours later, a roughened, granular appearance, with apparent epithelial desquamation; this being quickly followed by marked anemia (perhaps only the deceptive appearance of the forming translucent veil of membrane). Twelve hours later there was a well-formed membrane, about one-sixteenth of an inch in thickness, lining the entire surface of both eyelids, and beginning to push on to the ocular conjunctiva.

In the right eye the changes were a little slower, but in practically the same order. Increased intra-ocular tension was noted by Dr. Chase, who had kindly attended the case with me, and immediate preparations were made for paracentesis; but, before we could return, rupture had occurred, and the cornea also ultimately sloughed in part.

When recovery from the general disease occurred it was noted that a small portion of the lower segment of the cornea remained, and there was a dim perception of light. Dr. Chase kindly kept the eye under treatment, and proposed making an effort to form a new pupil, but the family removed to St. Louis, and all trace of the patient was lost.

This, and one of the fatal cases involving the eyes, had scarlatina immediately antecedent to their diphtheria, and the nose was seriously involved in all four cases.

The two fatal cases, in which membrane appeared in the ears, were also accompanied by nasal involvement, and the membrane extended through the Eustachian tubes, perforated the drum-membrane, and pushed out through the external meatus. Several other cases—all fatal—had middle-ear suppuration and perforation as a result, but a well-defined membrane was only detected in the two cases recorded.

The case of diphtheric enteritis recorded was under my personal observation, but not attended to by me. The patient was eleven years old, and the membrane was present in the fauces and in the nose. Intestinal hemorrhage was first noted on the fifth day of the disease, increasing in amount and frequency until death occurred on the morning of the seventh day. The blood was dark-colored and had the same foul odor noticed on the breath in those cases in which the faucial membrane is thick and gangrenous.

One death, credited to laryngeal stenosis, occurred under the following circumstances: There was no membrane in the larynx, but an extensive and tough one in the fauces. About the sixth day this began to separate; a large piece loosened spontaneously, flapped down, was drawn into the larynx during inspiration, and the boy choked to death.

In two instances I have observed erysipelas coincident with diphtheria, and one of these patients, a young man, seventeen years old (Case LX), recovering perfectly from both his erysipelas and diphtheria, was immediately attacked by characteristic typhoid fever with all the classical signs and symptoms: rose-spots, typhoid tongue, sordes,

typhoid temperature, tympanites, and ileo-colic pain, dying of intestinal hemorrhage in the third week of the typhoid fever.

Diphtheria is a disease of childhood rather than of adult life, as the following analysis of cases, according to age, will show:

1 year and under,	8 patients.	5 died.	62.5 per cent.
Over 1 year, not over 2,	12 "	3 "	25 "
" 2 years, " 3,	9 "	3 "	33.3 "
" 3 " " 4,	10 "	2 "	20 "
" 4 " " 5,	11 "	5 "	46 "
" 5 " " 10,	32 "	5 "	16 "
" 10 " " 15,	12 "	1 "	8 "
" 15 " " 20,	10 "		
" 20 " " 30,	16 "		
" 30 " " 40,	5 "		
45 years of age,	1 patient.	Recovered.	
47 " "	1 "	Died.	
52 " "	1 "	Recovered.	
	128	25	

Fifty of 128, or 40 per cent., were under five years of age, and 18 of the 50, or 36 per cent., died.

Eighty-two of 128, or 65 per cent., were under ten years of age, and 23 of them, or 28 per cent., died.

Ninety-four of 128, or 75 per cent., were under fifteen years old, and 24 of them, or 26 per cent., died.

There were 34 patients above fifteen years of age, and of them but one died. This was a man, forty-seven years of age, of dissipated habits, the disease well advanced before he came under treatment, and he died suddenly of cardiac paralysis when apparently convalescent.

The causes of increased prevalence and increased mortality among children are various. A sore-throat is usually not recognized and treated so early in a child as in an adult; treatment, when begun, is more difficult to carry out efficiently and thoroughly; the resisting power of the child's organism is less than that of the adult. The preponderance of fatality among very young children (under one year) is very marked, especially when we consider their comparative immunity from the disease. It will be noted that there were but eight cases of one year old and under. The youngest patient in the series was eight months old. It is a comparatively rare occurrence for nursing babes to contract diphtheria, even when exposed to it. But of those who do take it an extremely large percentage die; five of eight such cases, or 62.5 per cent., under my own care, died. Most of these very young patients live but a short time after their illness is recognized.

THE RELATIONSHIP OF SCARLET FEVER AND DIPHTHERIA.

The streptococcus diphtheriæ of Prudden cannot be distinguished by its physical characters from the streptococcus that causes scarlet fever, or from the one that causes erysipelas. It is not impossible that the same germ may have a different life-history under different circumstances; that environment may cause it, after many generations, to be endowed with new properties, malevolent or benevolent, as the case may be.

It seems probable that the streptococcus of diphtheria more commonly occurs in connection with scarlatina, and one observer (Heubner) is quoted as maintaining that what he calls "scarlet-fever diphtheria" is not so severe as ordinary diphtheria, that the tissue-necrosis is not so marked, and that laryngeal stenosis and paralysis very rarely result from it.

In the cases upon which this study is based there were 23 that occurred coincidently with or immediately following scarlatina, and 6 (25 per cent.) of these cases died, all but one evidently dying of the diphtheria. The nose was involved 9 times in the 23 cases and the larynx 4 times. In addition, 15 persons who had been exposed to scarlatina or to scarlatina diphtheria contracted diphtheria evidently of the common form, without any scarlatinal complication, and of the 15 one died. The nose was involved 3 times, and the larynx not at all in these 15 cases.

I have been told that in Bremen and Stockholm there occurs an overwhelmingly large number of the variety of cases which require intubation or tracheotomy in order to avoid a fatal termination of the case within a few hours of the onset of the disease. The percentage of such cases occurring here is small. The literature of the subject seems to show that in New York and Boston operative interference on account of laryngeal stenosis is called for oftener and earlier than it is in Denver. It seems possible that these cases are of the variety due to the more malevolent germ, said to be the Klebs-Loeffler bacillus, while a great portion, though of course not all, of the cases of slower onset and milder manifestations, are due to the less malevolent germ, probably the streptococcus.

The grayish or yellowish-white pellicle that so often covers the tonsils from about the third to the seventh day of scarlet fever may not always be a diphtheric membrane; yet I am inclined to think that it usually is, and when the pellicle spreads on to the hard palate and clings there persistently for many days, recurring as quickly as it is removed; when it thickens into a grayish mass, pultaceous on the surface and harder beneath, and accompanied by its peculiar sickening odor of decomposition; when, preceded by an acrid discharge which erodes both mucous membrane and skin, it enters the nose and there thickens until it occludes the whole cavity, perhaps pushing—ashy or even black in color—out of the nostrils on to the lip; when it creeps through the lachrymal duct out of the

puncta, lines the conjunctival sac, and chokes off the nutrient vessels of the cornea; when it passes along the Eustachian tube, breaks through the tympanic membrane and makes its appearance in the external ear; when it passes down into the larynx, covers the cords, and, occluding the glottis or slipping down in thinner form, invades the bronchi to their minutest subdivisions; then, whether it has preceded, or succeeded, or accompanied scarlatina, I recognize it as diphtheria, capable of spreading the contagion of diphtheria, with or without any accompanying disease, and of communicating diphtheria to persons who have previously suffered from and thus been made immune to the accompanying scarlatina.

There is a variety of deposit on the tonsils during scarlatina which, developing in the throat at the height of the anginose inflammation, disappears in a few days, never having at any time attained any great thickness, not spreading to any great extent, and usually capable of being easily removed with a swab. This I have not classed as diphtheria. But membrane of the more truly diphtheric type often occurs at this time, or its occurrence may antedate the appearance of the rash by several days, or even a week; or again, membrane may suddenly make its appearance during the eruption, or after the efflorescence has subsided and desquamation has far advanced.

It is peculiar that this truly diphtheric process occurs often in persons who have only been exposed to ordinary scarlatina, there being no diphtheria existing at the time in the neighborhood, the patients affected having previously suffered from scarlatina. Examples of this fact are Cases VII, XXVI and XVII of the series reported in this paper. They were exposed to scarlatina simplex, but took diphtheria; one developed a rash four days after having membrane in his throat. Cases IV and V, who had previously suffered from scarlet fever, contracted simple diphtheria of a malignant type from such an exposure. Case LXXV, a mother who had suffered from scarlet fever in childhood, nursed her children (Cases LXXIII and LXXIV), suffering from scarlet fever complicated with diphtheria, and contracted diphtheria alone. Both children died of cardiac paralysis. The mother had membrane in the nose and on the palate to within an inch of the teeth, had palatal paralysis as a sequence, and was a long time in regaining her strength.

It would have been interesting to have had a bacteriologic examination in these three cases to determine whether the infection was from the streptococcus, or the bacillus, or from both at once.

Case CV was a woman who had scarlet fever in childhood, nursed her two children through scarlatina simplex, and was immediately taken down with a severe type of diphtheria.

Cases CVI and CVII were a mother and child in a family four other members of which had just recovered from simple uncomplicated scarlatina. The fifth child, exposed only to the scarlatina, contracted both this disease and diphtheria. The mother contracted diphtheria alone.

Case CIX contracted diphtheria from Case VIII, which was one of laryngeal diphtheria.

Case CXV contracted diphtheria from Case CX, one of simple diphtheria of the fauces and palate. These four cases were placed in the same room in the hospital; the room had not had a case of scarlet fever in it for many months, and it had been thoroughly fumigated with sulphur and scrubbed with corrosive sublimate solution about once each month for a year. And yet Cases CIX and CXV, exposed to and suffering from diphtheria, were simultaneously attacked by scarlet fever. Both had albumin in the urine. Both desquamated. Case CIX died of suppurative nephritis, having apparently entirely convalesced from both his diphtheria and scarlet fever. I have included this death in the series of cases herewith reported as due to diphtheria.

These clinical testimonies to the apparent relationship or affinity of the two disease-processes might be multiplied, but multiplication of this simple testimony does not elucidate anything. May we not hope that careful and systematic bacteriologic study of cases may yet enable us to understand the rationale of the relationship, and simplify diagnosis, treatment, and prevention?

THE IDENTITY OF MEMBRANOUS CROUP AND LARYNGEAL DIPHTHERIA.

The lessening frequency with which membraneous croup appears in our mortality reports seems to indicate that this disease is either dying out or that practitioners are calling the condition formerly so designated by another name.

In all of my professional work, as student, as hospital resident and as practitioner, it has never been my fortune to see, either in my own practice or in that of my professional friends, a case that I could call one of membranous croup, *i. e.*, a non-infecting stenosis of the larynx, due to membrane-formation, as it is described in the text-books. I have seen cases that were called membranous croup, but with the diagnosis of which I did not and could not agree. The following cases are cited as examples:

Case I.—A young man now twenty years old. Every slight cold affects his throat. He has frequent attacks of tonsillitis and occasionally laryngitis of a catarrhal nature. His parents state that he had frequent attacks of greater severity in his

earlier years, accompanied by a "croupy cough." He would sit down to a meal feeling perfectly well; an attack would come on while he was eating; and he would almost die. Dr. W—— said it was membranous croup, and often he arrived just in time to save Harry's life. This is a case in which the patient's present condition offers a lucid explanation of the frequently recurring attacks of "membranous croup" in his earlier years.

He was finally cured of his "membranous croup" by the frequent administration of a home-remedy containing alum, sulphur, and molasses.

Case II.—A child three years old, seen in consultation with Dr. Bryant. It had a slight cold, and was suddenly taken with difficult, "crowing" respiration, rough, croupy cough, the ribs drawn in and the interspaces not filling out.

In this case the symptoms seemed typical of what is ordinarily called membranous croup, and tracheotomy seemed inevitable. Small fine râles were discovered all over both lungs, and inhalations of water vapor and of slaking lime seemed to relieve the difficulty of breathing, so that operative procedures were postponed for a day.

At the end of this time the laryngeal symptoms had greatly ameliorated, and disappeared entirely after a few days. No membrane was ever expectorated, but there was considerable bronchitis, with mucous expectoration. The case was plainly one of catarrhal laryngitis, and our diagnosis of membrane obstructing the larynx was premature and a mistake.

Case III occurred in a child just removed from a day-nursery, where it had been in the same room with four other children, all of whom had been attacked with diphtheria, and all of whom died. Two of the four had membrane in the larynx as well as in the fauces, and the other two had nasal involvement. This case, the fifth child, was suddenly seized with laryngeal symptoms and died after a very short illness. The attending physician certified the cause of death to be membranous croup. It seems to me almost certain, when I consider the intimate association of the patient with the four fatal cases, and its death in a few days after theirs, that the real case of death was laryngeal diphtheria.

Case IV.—The first of the four fatal cases referred to as being removed from the day-nursery. The attending physician informed the board of managers of the institution that it was suffering from membranous croup, and they, in consequence, were greatly amused at the precautions taken by the Health Department to prevent the spread of the disease. The patient came under my care at quarantine, and was a typical case of diphtheria. The membrane involved the fauces, palate, and larynx, and the child died after seventy-two hours' illness, having been tracheotomized six hours before death, which was due to heart-paralysis.

Case V.—A boy two years old was suddenly attacked one evening with difficult respiration and croupy cough, having complained for a day of what the parents regarded as a common cold. I was called hurriedly, and found the child black in the face and almost dead.

I was tempted to tracheotomize at once, but the subcutaneous injection of apomorphine caused prompt emesis, and the child's respiration improved. Turpeth mineral and calomel were administered in one-grain doses every fifteen minutes; the vomiting continued, the spasm of the larynx relaxed, and he became much better. The throat was carefully examined, and no membrane could be detected; but in spite of this the child seemed critically ill. The next day examination revealed a typical diphtheric membrane that had appeared since the preceding evening and covered both tonsils. It spread rapidly, covered the palate and advanced into the nose. For five days the little patient's condition was extremely precarious; then improvement began, and the membrane entirely disappeared in thirteen days after the date of the original attack. After the first evening there was no apparent laryngeal involvement.

There can be no doubt that this case presented all the classical symptoms of membranous croup the evening it was first attacked, and if death had occurred (and it seemed imminent), most practitioners would have certified to that as the cause of death. The subsequent history of the case, however, showed that the initial attack of laryngitis was probably only functional, occurring as the ushering-in symptom of an attack of diphtheria.

Case VI.—A child, aged one and a half years, a brother of Case LI, which died two weeks previously. Another sister had also died of a most pernicious form of diphtheria one week before. This babe was nursed by its mother, who was also nurse for the two children who died. It was taken ill, and died in twenty-four hours of so-called "membranous croup."

Case VII.—Into a house next to one in which diphtheria occurred one year ago, the premises of both being in a very filthy condition, a new family moves. After a week one child is taken sick and dies in twenty-four hours with what the physician calls "pseudo-membranous laryngitis." The same day a second child is taken ill with the same complaint, and dies in thirty-six hours. In the second case there is membrane visible in the fauces. The physician calls it "contagious membranous laryngitis" but says it is not diphtheria, although he regards it as being "quite as contagious as diphtheria."

Cases similar to the last two might be multiplied almost indefinitely from the records of the Health Department; a death from "membranous croup" being reported immediately before or immediately after several cases of diphtheria have occured in the same house or in an intimately associated family. Perhaps these occurrences only emphasize the cautionary admonition of Cohen and Eshner in their recent work on medical diagnosis, that "until a physician acquires considerable experience he had best consider all cases of membranous croup as diphtheritic." Yet, in my experience, older practitioners more frequently than younger ones pronounce laryngeal diphtheria to be "croup," and I am inclined to

regard the admonition quoted as catering too much to the fallacious belief which dignifies a symptom with the individuality of a disease.

One may not absolutely deny the possible existence of a non-infectious membranous laryngitis, for the condition would be a parallel one to that which exists in membranous bronchitis and enteritis. These diseases are, however, wonderfully rare, while the majority of believers in membranous croup rate it as a comparatively common disease.

Very recently Fraenkel published a paper detailing the results of autopsies on four cases of so-called primary or non-infectious membranous croup. In all, the mucous membrane of the pharynx and tonsils was intact, the disease-process being limited to the larynx, and in all the laryngeal membrane was found to contain the Klebs-Loeffler bacillus, the identity of which was proved, first, by staining, second, by culture-experiments, and, third, by the inoculation of animals. Still later, Martin of Paris found the Loeffler bacillus in 21 of 34 cases of croup, in which there was no membrane in the fauces. *Query:* Were the other 13 non-diphtheric?

Very important, as bearing on this particular point, is Prudden's case: One child died of a disease pronounced by the attending physician to be "croup, and not diphtheria," and Prudden himself failed to find either the bacillus or streptococcus of diphtheria in the membranes. However, a few days later, a second child of the same family died, presenting all the constitutional and local signs of diphtheria, "and the streptococci were found, not only in the membrane but in the viscera." Even the failure to find the diphtheria-germ in all cases is thus shown to be not positive or final testimony as to the non-contagious character of the disease; clinical evidence is equally important, and is very properly a supplement to, or supplemented by, bacteriologic investigation.

THE RELATIONSHIP OF DIPHTHERIA AND FOLLICULAR TONSILLITIS.

Occasionally that common and readily-identified disease, follicular tonsillitis, occurs epidemically and in a somewhat modified form. It has been asserted that when it so occurs it is really diphtheria. It would seem that there could be but one method of settling this question, namely, by bacteriologic examination of a large number of such cases. The type of follicular tonsillitis is so common and so readily studied, that it is a matter of some surprise that such an investigation has not already been made.

Clinical arguments against the supposed identity of the two conditions are, however, almost conclusive. In families or in institutions in which follicular tonsillitis prevails, all the cases are follicular; none develops extensive membrane; the nose is never involved; none of the patients dies. It is possible for a patient with this disease to be seriously sick, but the febrile conditions are almost constant in their occurrence and relationship; high temperature for a day or two is common, and it accompanies a full, bounding, rapid pulse; delirium may be coincident; when the febrile conditions subside they do so by crisis; circulation and temperature return to the normal at once and together. What a contrast to the progress and relationship of the febrile conditions, as already described, existing in diphtheria?

Of course, it is possible for diphtheric infection to be added to a previously existing follicular tonsillitis, but in such a case the clinical picture will change quickly, and it will always be noted that any immediately succeeding cases are typically diphtheric, both in incipiency and in progress. The follicular feature does not persist and manifest itself in subsequent cases after real diphtheria has made its appearance.

The deposit of follicular tonsillitis is a secretion, modified and unhealthy, perhaps, but still a secretion, and hence readily removed without harm to the underlying tissues. In sharp contrast is the diphtheric membrane, which is a fibrinous exudate upon a previously eroded surface, from which it cannot be removed without violence.

This distinguishing feature is all-important in the diagnosis, which is rarely difficult. If real doubt exist, twelve or twenty-four hours at most will suffice to clear it up. However, the fictitious credit attaching itself to the supposed rapid "cure" of cases of this kind has proved a strong incentive to some practitioners to pronounce as diphtheria all cases of follicular tonsillitis. This practice is most common in communities in which cases are not reported to the health-officers, and in which the premises are not placarded, and no quarantine is enforced.

A last argument against their identity is this: The diphtheric membrane ordinarily begins at one spot or location, from which, as a center, it spreads with a rapidity that is often alarming. Given a dozen or more foci (as would be the case if each follicle in the tonsil were a center from which the membrane could spread), and the rapidity of extension would be astounding. This would, indeed, be the most terrible and fatal form of diphtheria, by reason of the favorable circumstances attending its incipiency.

But the facts show that follicular tonsillitis is so seldom fatal that we may really say that it never kills, unless there exists some peculiar cachexia or other modifying condition of the patient.

The question of the identity of diphtheria and follicular tonsillitis may then be dismissed as unworthy of serious consideration.

(To be concluded.)

NEUROTIC ECZEMA.[1]

BY CUTHBERT R. BARHAM, M.D.,
FELLOW OF PITTSBURG ACADEMY OF MEDICINE, PITTSBURG.

IN the *Medical Record* of July 9, 1892, I published an article entitled, "A Study of Neurotic Eczema in Adults." The manuscript of that paper was placed in the hands of the publishers in March, 1892. Since that time I have continued my work and investigations upon this subject, and have been led to elaborate in some instances, and in many important particulars to change my views as formerly expressed regarding the etiology of this division of eczema.

The study of the relation of nervous disturbances to affections of the skin is not of recent origin, though systematic investigation in this direction has, so far, been undertaken by only a few dermatologists. Various authorities have indeed referred, at intervals, to the evidences of such relation, but in many cases only a reference was made. Among the pioneers may be mentioned Purdon,[2] Bastard,[3] Marracci[4] and Colominatti,[5] who in the years 1878 and 1879 reported cases of eczema in which various disturbances of the nervous system, or nerve-lesions, preceeded or accompanied the eruption, which seemed to depend on it.

Hebra taught that among other causes of eczema "faulty innervation" was often to be considered; Kaposi, that under certain circumstances, eczema must be considered as *neuropathic*. Wilson gave *nutritive and nervous debility* as a predisposing cause. Schwimmer, in his monograph, *Die Neuropathischen Dermatonosen*, 1885, seems to take the ground that the majority of cases of eczema depend on trophoneurotic disturbance. Kopp, on the other hand, in a monograph entitled *Die Trophoneurosen der Haut*, 1886, denies tropho-neurotic influence and is inclined to ascribe all eczematous eruptions to external irritation.

Crocker refers to vasomotor influence in an indefinite way as a probable cause of occasional eczema. Bulkley,[6] in his article, "Relation of Eczema to Disturbance of the Nervous System," ascribes many cases of eczema to "nervous disturbance."

Elliot[7] read a paper before the last meeting of the American Medical Association, in which he gave the name *reflex neurotic eczema* to a certain type of eczema occurring in babies and young children. He pointed out in this eruption peculiarities in location, grouping of the lesions, and course of the disease which are constant and which point to reflex nervous disturbance as the cause of the eruption. This, I think, is the first instance in which a variety of eczema has been isolated and described under the title of "neurotic."

In the cases related in this paper there are certain peculiarities of location, arrangement of individual lesions, and course of the eruption, which, together with the accompanying nervous disturbance and exclusion of external irritation, seem to warrant the recognition of a neurotic eczema.

It is the purpose of this paper to prove its existence as a distinct subdivision of eczema; to point out the character of the lesions and to state the grounds upon which the classification is advocated.

The discussion of a few typical cases may lead to a better appreciation of the subject. Owing to the length of the histories only the important features will be mentioned.[1]

CASE I.—Female servant, aged fifty-five, passed the climacteric five years ago; among other disorders connected with this period, had an eruption on the face, similar, as she stated, to that now evident. It disappeared after four weeks' duration. She has been free from eruptions of any kind until eighteen months ago. Six months previously to the present outbreak the patient returned to Ireland, and during the journey and stay was subjected to exposure and a great deal of mental worry on account of death in her family and other troubles. She also contracted malaria while there, and has had frequent malarial attacks since her return; at such times she is unusually constipated and suffers from insomnia and nervousness. The eruption is worse after these attacks. The appetite and digestion are good. Constipation is present at all times.

The eruption is situated on the lower two-thirds of the forearms and legs, and is rather more distinctly shown on the extensor than on the flexor surfaces, on the upper surfaces of the hands and feet, and is symmetrical.

The eruption is characterized by patches, circular or round in shape, and composed of vesicles or papules (or both) with intervals of healthy skin. The patches show all stages of inflammation, from unbroken vesicles and papules to raw exuding surfaces, or infiltrated and covered with crusts or fine scales. Each patch is limited by a line of papules or vesicles, and the division between healthy and diseased skin is sharp and absolute. (In a few instances there were observed outlying papules, or groups of from three to ten, but in no case was there observed that gradual fading of the eruption around the periphery observed in eczema as ordinarily encountered.) At all stages of the disease the pruritus has been intense.

CASE II.—A male, a weaver, aged thirty-five,

[1] Read before the Pittsburg Academy of Medicine, January 23, 1893.

[2] Union Medicale, 1878.

[3] Journal of Cutaneous Med., 1878.

[4] Giorn. Ital. delle Mal. della Pelle, 1878.

[5] Ibid., 1879.

[6] THE MEDICAL NEWS, January 31 and February 7, 1891.

[7] Int. Med. Mag., October, 1892.

[1] The cases given were taken from Dr. L. D. Bulkley's clinic at the New York Skin and Cancer Hospital, by permission of Dr. Geo. T. Elliot, under whose care they were.

no previous history obtained; suffered from constipation, obstinate and prolonged, and was "nervous and irritable." The eruption is located on the dorsum and interdigital spaces of the fingers and on the back of each wrist. Between the fingers the skin is sodden, but the inflammation is sharply defined at the edge of the patch. On the back of each wrist is a large, rounded, sharply-defined patch, moist and inflamed, the edges composed of vesicles and papules. The patch is infiltrated and the pruritus is excessive.

CASE III.—A male, longshoreman, aged thirty, with no previous history other than that the eruption has appeared at various times since childhood on his hands and legs, each time being symmetrical. His habits are irregular. He is constipated. The eruption is located on the backs of the hands, and consists of circumscribed patches formed of papules and vesicles closely aggregated. Some are irritated and moist, others are crusted. It is absolutely symmetrical, and the pruritus is excessive. He improved under treatment, but left the clinic before a cure was effected. He returned in two months with "elevated and inflamed moist patches, symmetrically situated along the ulnar border of the forearms and back of the hands." He remained at the clinic until discharged cured, but returned again in two months[1] "with patches of all sizes and shapes more or less inflamed," on the extensor surface of the wrists, hands, and forearms.

CASE IV.—Female, a servant, aged forty-three, without previous history. Constipation and nervousness are noted. The eruption is located on the extensor surface of the hands and wrists, and lately on the extensor surface of the legs. The eruption is characterized by groups of papules and vesicles of various sizes, forming patches, circular in the main, with sharply-defined edges, moist and irritated in character.

CASE V.—Male, a surveyor, aged twenty-four, who is out of doors on duty most of the time. His stomach is irritable, and he has to eat cold food, which brings on attacks of indigestion and increases his nervousness. He has not been free from the eruption for the past year. He has obstinate constipation, occasional indigestion, and nervousness. The eruption is on the cheeks and forehead, and there is a circumscribed patch on each cheek, 1½ inches in diameter, composed of closely aggregated papules, sharply defined. On the forehead are a number of similar circumscribed patches, containing from ten to thirty papules.

CASE VI.—A female, married, aged thirty-eight. The eruption has been present for ten years. She has complained of a tired listless feeling for some time. She is anemic, nervous, and has been constipated for a long time. The eruption is located on the cheeks and forehead, each cheek presenting a large circumscribed patch composed of thickly-set papules, with considerable thickening and scaling. On the forehead are a number of similar patches presenting the same characters as those on the cheeks, though there is less thickening of the skin.

[1] Dr. Geo. T. Elliot's notes, made from his record of this case.

CASE VII.—A male, a pauper, aged sixty-three. Until five years ago the patient was a fairly prosperous broker, when he lost all his property in speculation. He has no relatives living, and since then he has been dependent on charity. His health is wrecked, and he presents many symptoms of disseminated sclerosis of the cord. The outbreak of the eruption was preceded by great mental anxiety. He also has constipation. The eruption is located over the deltoid region, on the extensor surfaces of the arms and forearms, on the front of the thighs and knees, and around the circumference of the legs, being rather more marked on the extensor than on the flexor surfaces. There are patches composed of thickly set papules, circumscribed, scattered over the surface named, dry and scaling in character. The pruritis is intense.

CASE VIII.—A schoolboy, aged thirteen, has had eruptions since early childhood. He suffers from asthma when near the seashore, at which time the eruption is worse. His general health is excellent, and he has no constipation. The eruption is on the cheeks, the extensor surfaces of the arms and forearms, the front of the thighs and *back* of the legs. The patches are more or less circular, sharply defined, moist or scaling, or simply formed of papules in the primary stage, according to duration.

In the foregoing histories the following points seem worthy of note:

1st. The most striking peculiarity is the symmetrical disposition of the lesions. In many cases the symmetry is absolute, in others approximate, but in every case corresponding parts of the body on each side are found to be affected.

2d. The eruption tends to attack localities not as a rule liable to eczema in its primary state, *i. e.*, the extensor surface of the extremities.

3d. The arrangement of the lesions differs markedly from that usually observed in eczema. The lesions are not scattered indiscriminately over the affected area, but are grouped into patches, which are more or less circular. These patches are composed of closely aggregated papules and vesicles; the edges are sharply defined, and usually made up of a line of papules or vesicles. The periphery remains distinct, sharply defined, and absolute at all stages.

4th. The spread of the eruption is never affected by a gradual extension of the area of the diseased patches, but by the formation of new lesions or patches, in every respect retaining the characteristics of the older ones.

5th. The dissolution of a patch is accomplished not by a gradual shrinking of the diseased area, but by a decrease of inflammation, the original area remaining the same in extent.

6th. The eruption has a tendency to frequent relapses, for which often no adequate cause can be ascertained, and this in spite of the most careful attention.

7th. The pruritus is most intense.

Before entering upon a discussion of the etiology it may be well to give a short *résumé*.

1st. Previous, mental worry or nervous exhaustion of longer or shorter duration is noted in Cases I, II, IV, V, VI, and VII. (Insomnia and "nervousness" or "irritability" are included under this head.)

2d. Various functional irregularities and chronic constipation are noted in Cases I, II, III, IV, V, VI, and VII. Occasional indigestion in Case V.

3d. Complications: Asthma is noted in Case VIII; multiple sclerosis in Case VII; malaria in Case I; anemia in Case VI.

4th. External irritating conditions: Exposure to heat and cold in Cases III and V; exposure to irritating soaps and alkalies, presumably from occupation, in Cases I, IV, V, and VI.

5th. Locations attacked: Face, in Cases V, VI, and VIII; extensor surfaces of hands, wrists or arms, Cases I, II, III, IV, VII, and VIII; extensor surfaces of legs, thighs or feet, etc., Cases I, III, (previously IV, VII, and VIII); flexor surfaces, in Cases I, VII, and VIII, leg. (In each case, with the exception of Case VIII, after appearing on the extensor surfaces).

In studying this *résumé* we are impressed by the facts that in only three instances were the flexor surfaces involved; in two of these slightly; and that in *all* of the cases the eruption appeared here after first appearing on the extensor surfaces. In some other instances the eruption appears on surfaces liable to irritation from various causes, but in only a small number of these was there a history of exposure to such influences.

Considering external influences somewhat in detail, we find that Cases III and V were exposed to ordinary variations of heat and cold incident to an out-door life; so that the evidence of their influence here is not conclusive, probably serving only as of irritation after the eruption commenced, sources and hence should not be properly considered causative.

In Cases I, IV, and VI there was, from the nature of the occupation, presumable exposure to moisture, irritating soaps and alkalies, and in two of these (I and IV) the eruption appeared on parts naturally exposed to the action of such agents. But on examining the lesions we find that the appearance is not that usually presented by an irritative eczema. In no case is the palm involved, and in only one case (I) the flexor surface, and here it appears after being established on the extensor surface. Moreover, there is a tendency for the lesions to appear in separate and sharply defined *patches*, with intervals of healthy skin. This would not be the case were external irritation an important factor in the etiology, but instead we should have a more or less papular or vesicular eruption over the whole surface so exposed. In Case VI the question of external influence may be dismissed with the observation that the parts exposed to irritating agencies were not involved, but the face instead. I think, therefore, we may exclude external conditions as a factor in the production of this eruption, and give them prominence only as complicating, by irritation, after its establishment.

Of the functional irregularities, the most frequent was indigestion or irritability of the stomach, which was found in two instances. Whatever influence may be exerted by this condition must be reflex, and, except in chronic indigestion, is not of sufficiently long duration to cause the morbid changes seen in eczema. On the other hand it will readily be admitted that its influence is powerful after the establishment of the eruption, when the hypersensitive nerves and nerve-centers easily respond to a very slight stimulus.

Chronic constipation was noted in seven of the eight cases, and is probably a fruitful cause of the disturbance. Theoretically we may explain this action in one of two ways.

1. By reflex irritation, or 2, by irritation of both the central nervous system and peripheral nerves, in consequence of the retention in the blood of irritating alkaloids or products of digestion.

Asthma was noted in one instance, Case VIII, but as to its influence I am in doubt. It has long been noticed that this affection occasionally occurs as a complication of eczema, but as yet no satisfactory explanation has been offered. Similarity in etiology probably exists.

Multiple sclerosis is noted in only one Case (VII), and though I hesitate to ascribe too much importance to its influence, I am forced to believe that it is of some weight. The case in question was extremely obstinate, and resisted all treatment. It is very probable that the sclerosed papules acted as local irritants to adjacent portions of the cord. The significance of this irritation is shown by the theories promulgated in Gowers's work concerning the trophic functions of the cord in relation to the skin, *i. e.*, "it is probable that there is progressive representation (sensory) of the skin in the posterior nerve-cells of the cord." It is true that, as a rule, sensation is but slightly effected in multiple sclerosis; still these islands of sclerosed tissue may produce irritation in the posterior tracts, and thus render the sensory nerves more responsive to irritation. Gowers further states that the nutrition of the skin[1] "seems to depend on nerves which have their course in the posterior roots." Therefore, it seems

[1] Gowers: Manual of Diseases of the Nervous System. 1892.

probable that irritation in the posterior roots would produce trophic lesions in the skin which would be shown in the eczematous inflammation.

In addition to the multiple sclerosis, which may be considered rather as an interesting complication than a cause, there were certain functional irregularities.

Malaria was noted in one case (I), and, although this cannot be definitely isolated as a primary cause, it is certain that a symmetrical peripheral neuritis, whose pathology and symptoms are as yet but indefinitely recorded, may be due to such agents, organic or alkaloidal in character, as are contained in the blood in malaria.

This symmetrical peripheral neuritis is probably influential not only in the production of the lesions, but also in determining the location of the affection.

Anemia was found in only one case (VI). Its action, if any, is chiefly predisposing, not to eczema especially, but the debility consequent upon or leading to anemia necessarily lessens the resisting power of any tissue to irritation, local or reflex.

Previous mental anxiety or an existing state of nervous depression is found in the histories of six of the eight cases. Its importance cannot be overestimated. Bulkley[1] lays great stress on this point, and gives many clinical examples in which it is found to be a "predisposing element," or "exists in connection with other nervous conditions which act as the exciting cause of the eruption." Kopp admits the importance of this factor, but claims that it is chiefly predisposing. Gowers[2] referring to "spontaneous" sensations of the skin, such as itching, burning, tingling, etc., without visible lesion, classes them among the functional disturbances of the cord, and includes the very varied range of symptoms under the head of neurasthenia, which may be described as functional disease of the cord. There is enfeeblement of the general nervous system, and consequently impaired nutrition of the cord, from which follow perverted trophic functions and readier response to local or reflex irritation. In discussing the etiology of neurasthenia he says: "It should be remembered that mental anxiety is a potent cause of disease of the nervous system."

Now, eczema is an inflammation of the skin, and, as such, must be due to irritation. The irritation may ordinarily be accomplished in one or more of three ways.

1. By external conditions. 2. By direct action upon the tissues of noxious substances contained in the blood, either in the process of excretion or by being deposited in the tissues. 3. By action of the nerves supplied to the inflamed parts.

That it is not due to the first I think I have fairly demonstrated in the discussion of the *résumé* under the head of external influences. That it is not due to the second may be inferred from the grouped arrangement of the lesions, its symmetry of location, manner of spreading, and manner of healing. We have an example of eczema due to (presumably) direct action of noxious substances contained in the blood or the tissues. I refer to the so-called "gouty eczema," due to retention in the system of acids and from improper action of the kidneys. The spreading of this eczema takes place by peripheral extension, and healing occurs by noticeable peripheral contraction of a patch. Moreover, symmetry of location noticeable in neurotic eczema is rarely seen in gouty eczema.

For these reasons I ascribe to the variety under discussion a neurotic etiology. In considering this source of irritation we may examine in turn the various parts of the nervous system as follows:

1. Vasomotor or sympathetic system.
2. Sensory nerves and tracts of the cord.
3. The trophic centers of the cord, and
4. The reflex phenomena and their significance.

The part played by the vasomotor system is, I believe, mainly secondary. We may readily recognize disturbance in this quarter by the redness and slight swelling of the inflamed patches; yet evidence is lacking to show that simple dilatation or contraction of the bloodvessels, of however long duration, results in such permanent changes in the skin as we observe in eczema. In regard to the sympathetic system we have one report[1] of an autopsy from Prof. Michelani's clinic, in which, at the post-mortem of a patient suffering from universal eczema and who had died of pneumonia, "the upper cervical and celiac ganglia were fonnd markedly hyperemic, with cloudy swelling of the nerve-cells and marked pigmentation in the intercellular tissue."

As the same condition will be found in persons dying of pneumonia or typhoid fever, or in fact from any acute inflammation in parts situated near these ganglia, I fail to see that it is of much importance. At this time so little is known concerning the normal histology and physiology of the sympathetics that it would be unwise to speak decidedly for or against their influence. But as yet I see no reason to ascribe the eczematous eruption to their influence. The trophic centers for the skin, as before stated, seem to be situated in the posterior columns of the cord, or, according to Gowers, "the nutrition of the skin seems to depend on nerves which have their course in the posterior roots." It would probably be better to dismiss entirely the terms "trophic nerves and centers" and to accept the plausible

[1] THE MEDICAL NEWS, Jan. 31, 1891: "Relation of Eczema to Disturbance of the Nervous System."

[2] Gowers: Manual of Diseases of the Nervous System, 1892.

[1] Morrocci: Giorn. Ital. delle Mal. della Pelle.

theory of this author, that "nerve-endings have a structural continuity with the tissues supplied by them," and hence that the nutrition of the tissue is determined in its character by that of the nerve. By accepting this theory we reduce our consideration to two points—the spinal cord and the sensory nerves.

In regard to the spinal cord, it has been conclusively shown that the nutrition of a nerve is presided over or governed by certain ganglia or centers at its root. Now, if it is shown that the proper action of these centers is interfered with or hindered in any way by certain conditions, whether by local inflammation or irritation from other points, it would necessarily follow that a trophic disturbance of greater or less intensity would follow in the course of the nerve. And as the tissues are practically continuations of the nerves, and the nutritional energy diminishes as the distance from centers increases,[1] it seems most probable that this trophic disturbance would evince itself in the tissues.

We have seen that mental worry or shock can and does cause this perverted functional action of the cord, and have clinical examples[2] before us of the occurrence of eczema in this connection; while instances are not wanting of eczema occurring as a result of local inflammation in the posterior columns of the cord and confined to areas supplied by certain nerves.[3]

In connection with the spinal cord we may consider reflex phenomena. Owing to our lack of accurate knowledge as to the physiology of *reflex* inflammation, our opinions as to this question must be purely theoretic. We have seen that a large number of the cases here reported were associated with chronic constipation; some with indigestion more or less chronic. It is a fact that with improvement or relapse of these conditions a corresponding improvement or exacerbation of the eruption was observed, though not in so great a degree. Elliot,[4] speaking of the neurotic eczema of children, which agrees with that one in older persons in many particulars, says: "I do not see how the symptoms in the skin could be explained except on that basis (reflex origin), where we observe the eruption responding immediately to the development of an irritation in a distant portion of the body; varying in degree according to the intensity and persistency of the irritation; agreeing in its evolution and involution accurately with the changes in the character of the latter; disappearing with its removal and relapsing with its recrudescence." The same is true in part of the variety here considered. In adults the variations are not so marked, and, when the source of reflex irritation is associated with functional nervous disorder the removal of the source of irritation regarded as reflex does not result in the disappearance of the eruption. In view of this fact I am inclined to believe that the results of reflex irritation and nervous exhaustion are the same in regard to their action on the cord, *i.e.*, both produce more or less irritation of the trophic centers which results in perverted functional action. Whether this irritation is an actual inflammation or not I am not prepared to state, but in results it is practically the same.

Should further investigation prove that inflammation does actually exist, then the significance of *reflex irritation* will be made plain.

In regard to the sensory nerves, their participation is shown by the intense itching present in the affected area from the beginning of the eruption. This feature, while it is only a complication, or a symptom, if you please, denotes, from its early occurrence, I think, either a primary affection of the sensory nerves or an irritation of the sensory centers, already mentioned, at an early stage of the disease.

I notice, in Gowers's work on *Nervous Diseases*, a description of a form of *multiple neuritis*, symmetrical in location, after the general type of lead poisoning which tends, by preference, to attack the nerves supplied to the extensor muscles and tissues covering them, and which, according to this author, is rare and always due to "a morbid blood-state having direct influence on nerve-tissue." This morbid blood-state seems to consist in the presence of some virus or organic substance to which the nerve-fibers are susceptible. Among these substances are malarial germs, products of constipation and indigestion (ptomaïnes, etc.), certain metallic poisons, etc., of which the first two classes are encountered among our cases. Various trophic disturbances follow and are apparently due to this neuritis, especially in the muscles, more rarely in the skin. This neuritis is not persistent after the cause is removed, but disappears in time, the nerve resuming nearly, if not quite, its normal condition, and the functional activity of the nerve is rarely entirely destroyed.

In 1879 Colomiatti[1] reported a number of cases of eczema in which, on microscopic examination there were found material changes in the nerves supplied to the affected parts; while in cases which had been cured he found the nerves nearly or quite restored to the original state. Leloir[2] was able to verify these statements in 1890.

[1] Gowers: Treatise on Nervous Diseases, 1892.

[2] Bulkley: THE MEDICAL NEWS, Philadelphia, January and February, 1891; Bastard: Journal of Cutaneous Medicine, London, 1878.

[3] Purdon: Union Médicale, 1878.

[4] International Medical Magazine, October, 1892: "Reflex Eczema in Babies and Young Children."

[1] Giorn. Ital. delle Mal. della Pelle, 1879.

[2] Annales de Dermat. et de Syph., 1890.

Now, as to the connection between neurotic eczema and multiple neuritis of this type I desire to point out a few points of interest. This neurotic eczema is rare, and is found often in connection with chronic constipation, sometimes with malaria, the same being true of the neuritis. The neuritis is symmetrical and tends to attack nerves supplied to extensor surfaces, while the lesions of neurotic eczema are symmetrical and tend to involve extensor surfaces. Pain, which is noted by Gowers, is absent in this form of eczema, but there is intense pruritis.[1]

The circumscribed character of the eczema is also strongly in favor of the theory that in some cases, at least, the peripheral inflammation of the nerve causes the trophic disturbances in the skin, and, consequently, only the parts supplied by this nerve are affected.

Schwimmer,[2] in discussing Colomiatti's report, makes the following comment: "Contributions of this kind demonstrate that a nerve-lesion may be followed directly by the eruption of eczema, which was formerly known only of erythema, urticaria, and herpetic eruptions;" also that "the nerve-fibers themselves show a process of degeneration in the course of eczema." As a similar degeneration is sometimes seen in nerves supplied to inflamed tissues, it remains in doubt whether the neuritis, when observed with eczema, "is due to the intensity of the inflammation in neighboring tissues,"[3] or whether the eczema is the result of the neuritis. From the fact that the neuritis often occurs independently of eczema I am inclined to the latter view, inasmuch as this offers some explanation for the location of the eruption on the extensor surface, while if the former were true it seems probable that the eruption would attack flexor surfaces instead. Moreover, the fact that the intense pruritis is present from the beginning is an argument in favor of the latter view.

From the foregoing study I have come to the following conclusions:

1. That there is a variety of eczema due to nervous disturbance, which may be recognized by the following characteristics:

a. Grouping of the lesions in circumscribed patches, sharply separated from adjoining healthy skin.

b. Symmetry of the eruption as a whole.

c. Preference for the extensor surfaces of the extremities.

d. Absence of peripheral spreading or contraction of the separate patches.

2. That the nervous disturbance is a perverted functional action of the "trophic centers" in the cord; and probably in some cases a peripheral neuritis.

3. That reflex irritation—from various functional irregularities, mental anxiety, neurasthenia, etc.—are important predisposing factors.

WESTINGHOUSE BUILDING.

[1] Bulkley cites one case in which acute pain preceded every outbreak of the eruption. THE MEDICAL NEWS, February 7, 1891: "On the Relation of Eczema to Disturbances of the Nervous System."

[2] Neuropathischen Dermatonenrosen, 1883.

[3] Die Trophoneurosen der Haut: Carl Kopp, 1886.

AIDS TO THE ADOPTION OF THE METRIC SYSTEM IN PRESCRIPTION-WRITING.

BY ELI H. LONG, M.D.,
ADJUNCT PROFESSOR OF MATERIA MEDICA AND THERAPEUTICS, UNIVERSITY OF BUFFALO; PROFESSOR OF MATERIA MEDICA, BUFFALO COLLEGE OF PHARMACY.

THE question of the practical use of the metric system by physicians is coming at the present time to assume considerable importance. We are upon the eve of the issue of the new United States Pharmacopeia, in which all quantities will be expressed in metric terms, a feature that was adopted after full and free discussion by the representative physicians and pharmacists who composed the pharmacopeial convention. This step in advance will never be retraced; therefore, the sooner we take our stand accordingly the better.

Enough has been said in discussion of the new system, and the verdict seems to be that it is unquestionably superior to any other, mainly because it is simpler. This paper, therefore, takes for granted the desirability of its more general use, and aims to meet practically some of the difficulties and objections that stand in the way of its adoption.

The chief difficulty lies in the fact that we do our thinking in the system of weights and measures most familiar to us, so that all, except those who have early and thoroughly learned the metric system, must practically do their calculating for a time in the old system. The practical American sees little utility in a system that requires a mental translation at every turn; hence the indifference to the superiority of the metric system among the members of our profession.

I am convinced that in order to meet this difficulty we must simplify the relation between the two systems so as to reduce to a minimum the necessity of translation and calculation. And so effectually can this be done that to master the application of the metric system to prescription-writing need be a matter only of a very few moments' thought, even to those who have employed the old system for years. The plan here given has, by extensive use in class-work, been found fully adequate.

We begin by making the number of doses in our prescription correspond with the number of grains

in a gram. As there are between *fifteen* and *sixteen* grains in a gram, either of these numbers[1] can represent the whole number of doses. This being determined, we find that the *same figure* that expresses the *single dose* of any ingredient *in grains* expresses also its *total quantity* in *grams*. The following will illustrate this, the same rule obtaining as well with *minims* as with *cubic centimeters*:

	Grams or c. c.
R.—Potassii bromidi (single dose 10 grains)	10
Morphinæ sulphatis (single dose ¼ grain)	25
Spiritus ætheris nitrosi (single dose 30 minims)	30
Aquæ q. s. ad (16 teaspoonful doses)	60
M. Sig., etc.	

Observing the cardinal rule that the number of doses shall equal the number of grains in a gram, or of minims in a cubic centimeter, we find that sixteen 10-grain doses amount to about 10 grams; sixteen ¼-grain doses amount to about ¼ or 0.25 of a gram; sixteen 30-minim doses amount to about 30 cubic centimeters. When the single dose is a fraction of a grain the latter requires simply to be expressed in decimal form under the same rule.

The simplicity of the plan appears at once. It is necessary only to determine the single dose of any ingredient in grains or minims and write the number down as expressing the whole quantity in grams or cubic centimeters. It follows that, instead of being a difficult system to use, the metric system requires much less effort than writing according to the old system, for the reason that calculation and multiplication of doses are entirely done away with.

Sixteen doses are quite sufficient in most cases for one prescription, and the quantity of the dose, whether a teaspoonful, a dessertspoonful, or a tablespoonful, is immaterial so long as the number of doses is the same. If, however, it is desired to order twice the number of doses, it simply requires to double the number expressing the quantity in case of each ingredient; or, if half the number of doses is wanted, to order one-half of the quantities which the rule would give.

Another objection sometimes offered is that the bottles in present use are not of proper sizes for convenient metric quantities. But the plan here advanced would exactly suit the present sizes of bottles; thus, sixteen teaspoonful doses will make two fluidounces; sixteen dessertspoonfuls, four fluidounces, and sixteen tablespoonfuls, eight fluidounces.

In prescribing powders or pills the same rule applies as for fluids, for example:

	Grams or c. c.
R.—Pulveris ipecacuanhæ et opii (single dose 5 grains)	5
Pulveris digitalis (single dose 1 grain)	1
Strychninæ sulphatis (single dose $\frac{1}{50}$ grain)	02
Misce et divide in chartulas numero xvj.	

[1] One gram equals 15.43 grains, while one cubic centimeter measures 16.23 minims. Therefore, if one number is adopted for both liquids and solids, 16 is the better one. In case of ordering pills, powders, or other solids, 15 would be more nearly accurate.

The ordering of fifteen or sixteen doses always establishes the relation between the two systems, which permits us to apply the rule that has been demonstrated and which may be fully stated thus:

1. *Make the whole quantity to consist of sixteen doses;* then, 2. *The number that represents the single dose of an ingredient in grains or minims will express the required quantity of that ingredient in grams or cubic centimeters.*

It may be objected to this rule that it does not render one independent of the old system. This is true at first, but in learning a new system of any kind the most effectual way is to come practically into contact with it. This is what we accomplish by thus linking the two systems together, and the result must be that we soon acquire a familiarity with the simpler, new system, and the ability to use it independently will be only a matter of time.

Another objection to the use of the metric system, one that may be valid as applied to some sections, but which must be regarded as much an excuse as an objection when applied to cities, is that some risk of error is incurred on account of dispensing pharmacists being unfamiliar with the system. This objection is met by the fact that the handbook of the pharmacist, the new United States Pharmacopeia, is to employ the metric system exclusively, which fact gives evidence that the pharmacal profession is fully abreast, if not in advance of the medical, in respect to the matter under consideration; otherwise the Pharmacopeia would hardly show this advance. Indeed, if the comparison be a fair one, we shall find among representative pharmacists and physicians more pharmacists than physicians practically conversant with the metric system.

Therefore, and in cities especially, no one need fear to send a prescription in metric terms to any *first-class* pharmacy.

CLINICAL MEMORANDA.

REPORT OF THE TREATMENT OF A CASE OF FRACTURE OF THE FEMUR DURING DELIVERY.

BY LEROY W. HUBBARD, A.M., M.D.,
OF NEW YORK CITY.

IF we judge from the published reports of cases, we must conclude that fracture of the femur during delivery is a rare accident in obstetrics. I have been unable to find reports of more than three cases, and all of these occurred during the present century.

The first case was that of J. H. Vander Veer.[1] The child was extremely large, weighing fourteen pounds, and presented by the breech. The left thigh was bent back and sideways in the uterus. The delivery seems to have

[1] N. Y. Journ. of Med., 1847, vol. viii, p. 378.

occurred without much interference on the part of the physician and without accident except cessation of pulsation in the cord due to retention of the head. After delivery it was noticed that the left thigh was motionless, and an examination showed a false point of motion without crepitus.

The method of treatment is not given in detail, but nine days after delivery, the inflammation and swelling had increased very much, the bandages were loose owing to constant motion, and the thigh was flexed or semiflexed on the abomen. As to the result, "the union was better than expected."

In Dr. Jas. Young's[1] case the fracture was not discovered for two weeks after delivery, and then only because continual crying on the part of the child led to an examination. Pasteboard splints were applied and kept on for six weeks. The comment was: "Rare and troublesome case and difficult to keep clean." As to the final result nothing is said. This case was a perfectly normal delivery, the head presenting, and the pertinent question is asked: "How was the leg fractured, and when?"

Dr. E. N. Chapman[2] reports a case that also occurred in a normal labor. The fracture was at the junction of the upper and middle thirds of the thigh, and crepitation was present. He employed a sole-leather splint, which was kept on for fourteen days, and the result seems to have been good, for he reports "no shortening, and difficult to locate the fracture."

The fact that the femur may be fractured in a normal labor and that the accident can occur quite easily in a breech-presentation when even precaution is taken, may perhaps be sufficient reason for presenting a short report of a case. I am further influenced by the statements of two of the gentlemen who reported their cases, that it was exceedingly difficult to keep the fragments in apposition and to keep the child clean.

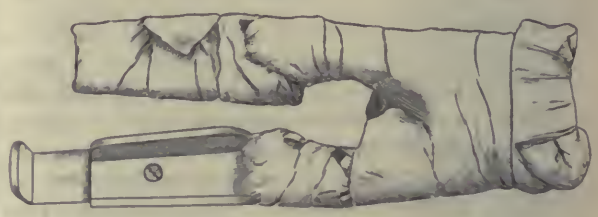
On June 15th, 1892, I was requested by a colleague in a neighboring city to see with him, in consultation, a baby who had been born the day before with a fractured thigh.

I made an appointment for the following day, and then began to study a plan of treatment. Realizing the difficulty, as expressed by the gentlemen quoted, of applying to a child of that age extension or coaptation splints which could be kept in place or would not become so readily soiled as to make frequent change necessary, I was for some time puzzled.

During my service at Bellevue Hospital I had treated a fractured thigh in a baby a few weeks old by placing it upon a board and making extension by means of adhesive plaster and rubber bands. The result was excellent, and during the treatment it was quite easy to keep the child clean. I determined to try the same method in this case, with some modifications. Keeping in mind the approximate size of a newborn child, I cut out a pattern and took it to a carpenter, who made under my direction an apparatus illustrated herewith in Figs. 1 and 2. The main part consisted of a piece of half-inch board, cut in shape resembling the trunk and lower limbs of a child. Upon the edges of each extremity narrow strips were fastened, making shallow troughs, and to each was attached a sliding foot-piece which could be regulated by means of a thumb-screw.

On the following day I saw my patient, a healthy, well-formed, vigorous boy—in consultation with the family physician. The mother, a primipara, had carried the child to full term, the breech presented, and the labor being prolonged with prolapse of the cord, which ceased to pulsate, it was necessary to extract the child somewhat rapidly. Apparently no undue force was used, but my friend discovered after delivery that the left thigh had sustained a fracture at the junction of the upper and middle thirds.

FIG. 1.



Examination showed the thigh to be swollen, the flesh being hard and tense. When undisturbed, the child lay with the limb drawn up in a position of flexion, abduction, and external rotation, and was quiet; but any attempt to move it evidently caused pain and was met with a muscular resistance which was remarkable in a child of that age. There was marked deformity and a false point of motion, but no crepitus. By making steady traction on the lower portion of the thigh, the body being firmly held, the muscular resistance was gradually overcome and the limb could be placed in a good position. When this was accomplished the child ceased crying.

FIG. 2.

The body and thigh portions of the apparatus were now thickly padded with cotton held in place by turns of a roller bandage, and I then applied to the leg and thigh below the seat of fracture two narrow strips of rubber adhesive plaster, and to the lower end of each attaching a loop of stout cord; the whole being held in place by a roller bandage carefully stitched. The baby was then placed upon the board and the body firmly secured to it by a bandage, and the leg troughs thickly padded with cotton. Through each loop of cord I passed double a rubber elastic band used by stationers, and slipped the double end over a screw in the upright of the sliding foot-piece. By drawing this down and fastening it with the thumb-screw the fragments could be brought into apposition and held there by elastic tension, in case the body of the child slipped any. For additional security and to keep the ends of the bone from riding up, owing to the vigorous movements of the child, a strip of plaster was carried over the thigh and the whole limb secured

[1] Trans. Edinburgh Obstet. Soc., 1875, 3, 127.
[2] Med. and Surg. Reporter, Phila., vol. ix, 329.

by a bandage. The uninjured limb was fastened to the other leg-piece to keep it out of the way. Fig. 3 shows the child in the apparatus. As soon as the dressing was completed he ceased to cry, became quiet, and soon contentedly nursed.

During the whole course of treatment he could be easily handled, the dressing did not become soiled with the discharges, and it was very little more trouble to take care of him than of any baby of that age. In spite of the facts that he was jaundiced, was not washed for three weeks, and that the weather most of the time was hot, he ate and slept well, thrived, and actually grew fat. It was necessary to readjust the body bandages two or three

FIG. 3.

times, owing to the wriggling of the child, and once, I believe, the family physician loosened the strip of plaster over the thigh on account of swelling. At the end of three weeks the apparatus was removed and union was found to be quite firm. There was no excoriation from the plaster or from pressure. There was a large amount of callus, but no shortening.

When I saw the child again, in August, the callus had nearly disappeared, the limb was straight, no shortening had taken place, and the union was very firm.

This method commends itself in the treatment of all fractures of the thigh in very young children, for the following reasons:

1. It is easy to reduce the deformity and keep it reduced, with the fragments in good apposition.

2. Frequent changes of dressing are not required, thus securing rest to the injured parts.

3. The apparatus and dressings can be easily kept clean, and the child can be cared for with very little more trouble than any normal and healthy child.

4. It can be quickly constructed, and its cheapness brings it within reach of all.

326 LENOX AVENUE.

GONORRHEA OF THE RECTUM.

BY GEORGE DOCK, M.D.,
PROFESSSOR OF THEORY AND PRACTICE OF MEDICINE AND CLINICAL MEDICINE IN THE UNIVERSITY OF MICHIGAN, ANN ARBOR, MICH.

THE existence of gonorrhea of the rectum, admitted to be a rare disease by most writers, has been denied by others. Since the discovery of the gonococcus of Neisser (1879) only one case has been recorded in which that organism was found in the rectal discharges. (Frisch, *Mitth. aus der Syph. Klinik zu Würzburg*, xxv, 1891; also in Virchow-Hirsch's *Jahresbericht*, ii, 1891, 552, and *Centralbl. f. Bakt. u. Parasit.*, i, 1892, p. 11.) Other cases, not necessary to cite, have been published, without an examination of the pus, but their true gonorrheal nature has been questioned.

A good deal of the skepticism with regard to gonorrhea of the rectum is no doubt due to the ideas of some of the older writers, which have been handed down without criticism by later ones. Evidently the whole subject must be studied objectively in the light of bacteriology and, if possible, also by experiments. In the meantime, the account of a single case, even if imperfect, may do good in calling attention to the subject, and it is for this reason that I report the following:

J. P., twenty-five years old, a barber, applied at the medical clinic of the University Hospital for the treatment of spermatorrhea. The patient stated that he had had gonorrhea three years before, but that after some months the discharge ceased entirely. For a long time he believed that he had spermatorrhea, a belief probably kept up by some of the "doctors" consulted. During the ten weeks just before admission he consulted and was treated more or less by six different practitioners. The last coitus took place eight weeks before admission. Six weeks after that he began a bougie-cure for impotence, using at the same time rectal suppositories as part of the treatment. After the sound was passed the third time a muco-purulent discharge appeared at the meatus urinarius and continued up to and after admission. This was accompanied by the usual symptoms of mild gonorrhea.

The pus contained considerable numbers of gonococci having the usual morphologic and tinctorial characteristics.

Repeated examinations showed the absence of spermatorrhea, and we were about to send the patient back to his physician at home when the rectal complication was discovered.

Feeling an inclination to stool, the patient went to the closet. There he passed a few drops of watery matter, part of which he brought to my laboratory. This was examined by my assistant, Dr. Whinery, who found gonococci. This led to a careful inquiry into the history as given (some of the statements of which had been looked on with natural distrust when first given), and to a rectal examination. Although the patient had an unusual sensation in the rectum, he had not attributed much importance to it, and it is probable that had he not seen the pus no examination would have been made.

On examining the rectum by means of a bivalve speculum I found intense redness and swelling of the mucous membrane as far as the instrument reached, a distance of about four inches. The surface of the mucous membrane was finely granular, without ulcers or erosions. The inflammatory process was sharply limited in a zigzag line at the margin of the epidermic part of the anus. In the folds were masses of pus, most of them small, and in the collapsed part, just above the end of the speculum, was about half a dram of pus and mucus.

Microscopically, the pus showed the ordinary polynuclear leukocytes, with a small proportion of eosinophilous cells. It contained large numbers of diplococci, identical in size and form with those in the urethral pus and in that from other cases of gonorrhea. Some of the cocci were free; most of them, however, were contained within the leukocytes. They decolorized by Gram's method. In some parts of the pus there was apparently a pure culture of the gonococcus, in others bacilli and cocci could be found.

The patient at that time and before had no itching or

pain about the anus or rectum, no tenesmus or other unusual sensation, except the slight uneasiness, probably a feeling of fulness, as the tumefaction of the walls of the gut was quite marked. There were no constitutional symptoms except at times a very slight degree of fever.

It seems as if the infection in this case must have taken place by means of the suppositories referred to as having been employed in treatment. These were introduced at night, after dressing the glans. No antiseptics were used for the urethritis. The fingers were not introduced within the anus, except in inserting the suppositories. The case of Rollet, in which a patient with urethritis, who provoked stools by putting his fingers in the rectum, and who eventually inoculated the anus, is often quoted. (*Dict. Encyc.*, Art. "Anus: Maux Syphilitiques," p. 494.)

There seems to be no reason for doubting the patient's statements. Though extremely hypochondriacal, the man gave no history or sign of sexual perversion. There was no evidence of pederasty. He slept alone. The history of the urethral gonorrhea, it is true, is rather suspicious, though not entirely improbable. But these are not essential matters. The very obscurity of the mode of origin, in connection with the insignificant symptoms, indicates how easy it would be to overlook such a condition.

Although some writers maintain that gonorrhea of the rectum can only arise from sodomic practices, the case of Rollet constitutes an exception, and the same writer, as well as others, holds that, in women with gonorrhea, infection of the anus takes place from the spread of the discharges. A case is reported in the *Maryland Med. Journal*, June 1, 1882, in which rectal gonorrhea was observed in a woman without a history of pederasty.

It has been supposed (A. Bonnière, "Recherches nouvelles sur la Blennorrhagie," *Arch. gén. de Méd.*, April, 1874, p. 405) that the rectal mucous membrane is not inoculable with the gonorrheal virus. This view must be abandoned in view of the histologic examinations of Frisch. In my own case there could be little doubt that the specific inflammation involved all the parts visibly affected, but I could not obtain tissue in order to confirm the results of the observer just named.

The patient remained under observation several weeks. He used suppositories of iodoform, two grains each; later, small injections of creolin, 1 per cent. The redness and swelling subsided considerably. The amount of pus diminished, though there was always a good deal of it. The pus never appeared again, as on the first occasion, giving rise to a call to stool. The number of gonococci diminished slightly, the cells being less thickly filled with them.

The pus was always the same in its microscopic appearances and rather peculiar. It was pale-yellow and appeared in small lenticular bits floating in a clear, watery mucus. Numbers of these bits made up the larger masses always to be found within the rectum, between the folds.

There were never marked local symptoms, except after using the creolin, which caused burning. Later, defecation was sometimes painful. There was never excoriation or redness outside the anus, as described by the older writers.

The urethritis in this case, though not severe, was very intractable. It was not affected by zinc sulphocarbolate, and yielded very slowly and imperfectly to silver nitrate.

The chronic nature of the rectal inflammation, with the considerable swelling of the submucous tissues, led to the thought of the development of stricture. Frisch, in reporting his own case, raised the question whether many so-called luetic strictures of the rectum were not really gonorrheal, and, in the light of the case just reported, the question seems an important one. In this connection the cases reported from Baltimore (MEDICAL NEWS, August 14, 1886, p. 180) acquire a new interest. It may be possible to learn something of their later histories.

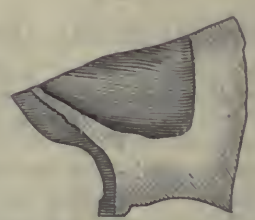
In my own case, as the patient could not be made to consider his rectal disease as more important than the imaginary ailment for which he presented himself, the later stages of the condition could not be followed.

A FOREIGN BODY IMPACTED IN THE LARYNX SEVENTEEN MONTHS; REMOVAL BY LARYNGO-TRACHEOTOMY; RECOVERY.

BY J. F. KLINEDINST, M.D.,
EYE, EAR, AND THROAT SURGEON TO YORK HOSPITAL AND DISPENSARY, YORK, PA.

L. H., thirty-nine years old, a farmer, on April 28, 1891, while cutting down a tree, was struck upon the back of the neck by a heavy falling limb and thrown to the ground. Consciousness was lost. The man was immediately picked up by his companions, carried to the house, and a physician summoned. After a half-hour consciousness returned, but there was inability to speak and complaint of a sense of suffocation. Examination of the mouth disclosed that an upper set of three artificial teeth, which the man had been wearing, was missing, and it was at once surmised he had swallowed it. His companions repaired to the place where he had fallen and there found the three artificial teeth, attached to a small piece of the broken plate, and, also, a part of the plate about the size of a pea. The greater part of the rubber plate was, however, missing.

FIG. 1.



For nine days the man suffered inexpressible agony, gasping for breath, and spent most of this time sitting in a chair, not being able to lie down. At the expiration of this time, during a violent attack of coughing, with threatening suffocation, he expelled the larger part of the missing plate of rubber. (Fig. 1.) He now was greatly relieved, could breathe with more ease, and was able to sleep at night in the recumbent posture. Sleep was, however, not as sound as before the accident, for

he was awakened at times by violent attacks of coughing and a sense of suffocation, which would gradually subside, when he could resume sleep. His voice, however, had not yet returned. What had become of the remaining part of the rubber plate was a mystery. The patient was not conscious of the presence of a foreign body in his larynx. The loss of voice and the other symptoms of laryngeal irritation were attributed to the irritation resulting from the nine days' sojourn of the piece of plate and its subsequent expulsion. From this time on the man's health began to fail and his voice did not entirely return until several months later, and even then it remained husky up to the time of operation. Following the accident there had been a constant cough.

In the fall of 1891, about six months after the accident, he had repeated chills and some fever; and soon he began to expectorate muco-purulent matter and to have night sweats; his breath also became offensive. In April, 1892, he expectorated some blood. These symptoms all seemed confirmatory of a diagnosis of tuberculosis, in which it was believed the larynx participated. Some time later the man was presented by his physician to the Medico-Pathological Society of York County, when I first saw him. He was emaciated; his complexion was sallow; his expression anxious and distressed. His breath was exceedingly offensive and of a grangrenous odor. A constant laryngeal cough was present, with muco-purulent expectoration. The temperature was slightly elevated and the pulse-beat accelerated. A physical examination of the chest revealed only bronchial râles; no cavities or consolidation in any part of either lung. The voice was husky and weak. A presumptive diagnosis of a foreign body in the larynx was made. On laryngoscopic examination the missing piece of plate was seen lying in the larynx

Fig 2.

Fig 3.

in an antero-posterior direction, with its serrated edge upward and about one-eighth of an inch below the vocal bands. (Fig. 2.) An operation for its removal was advised and was performed in the presence of a number of physicians at the York Hospital, October 3, 1892.

About half an hour before the operation the patient was given a hypodermatic injection of morphine and atropine, and was then anesthetized with chloroform. The skin over the larynx and trachea having been rendered aseptic, an incision was made through skin and fascia, from about the middle of the thyroid cartilage downward about two inches and a half. After all hemorrhage was stopped an incision was made in the larynx through the crico-thyroid membrane, cricoid cartilage, and downward through the first two rings of the trachea. The edges of the wound being retracted, an angular nasal polypus-forceps was introduced upward into the larynx and grasped the piece of plate, which, after a strong pull, could not be dislodged. The forceps was withdrawn and again introduced upward, but more nearly perpendicularly, and again grasped the piece of plate; by giving the forceps a slight turn to the right, I succeeded in dislodging and removing the foreign body. (Fig. 3.) A rubber canula was then introduced into the inferior portion of the opening in the trachea. The crico-thyroid membrane, cricoid cartilage, and trachea, above the canula, were united with carbolized catgut sutures, while the skin and fascia were united with silk sutures. The usual antiseptic dressings were applied around the canula. Over the mouth of the canula was kept a thin layer of moistened sublimate gauze through which the patient could breathe.

During the time that the canula was in the trachea, the temperature of the room was kept at from 75° to 80°, and the atmosphere was charged with moisture from a kettle of boiling water. The object of having the temperature of the room so high and its atmosphere charged with moisture, was for the purpose of approximating the condition of the inspired air to that in which it would be if inspired through the nostrils. The patient's temperature, seven hours after the operation, was 100.2°, falling to 100° on the following day, and continuing thus for four days, when it began to gradually fall until the eighth day, when it reached 99.2°, where it remained until the patient was discharged.

There was not much discharge from the canula or wound, except on the day following the operation, when there was discharged from the canula some muco-pus, evidently from the situation in which the foreign body had been impacted. On the third day the canula was removed, and the opening in the trachea closed in three days by healthy granulations. The dressings were changed daily, and on the fourteenth day the patient was discharged from the hospital, with the upper portion of the wound entirely healed and the lower portion covered with a cicatrix. Upon his discharge the patient was greatly improved in appearance and color. Cough had ceased; the expectoration was changed in character; the offensiveness of the breath had disappeared; and the voice had become more clear, although still husky and weak. Four weeks after his discharge from the hospital the improvement was still more marked. The man was much stouter and had gained nineteen pounds in weight.

There are several points of interest in this case. The first that attracts attention is the remarkable tolerance, by the larynx, of a foreign body so large as the one removed. Again, the extraction of such a foreign body by means of the laryngeal forceps would have been impossible, because of its situation and the fact that it had become imbedded. The symptoms presented a striking resemblance to those of laryngeal tuberculosis, but a careful and thorough examination was sufficient to disprove such a diagnosis. Finally, the case demonstrates the point that when a foreign body is impacted below the rima glottidis the only safe and proper method of extraction is by tracheotomy or, preferably, laryngo-tracheotomy, which does not entail any serious injury upon the vocal apparatus.

MEDICAL PROGRESS.

A Complicated Labor.—BEUGNIES (*Journal de Méd. de Paris*, vol. v, ser. 2. No. 8, p. 95) has reported the case of a primipara, twenty-two years old, who had been in labor for forty-eight hours, in consequence of dystocia dependent upon pelvic narrowing. The cord was prolapsed and the child was dead. The head was at the superior strait, and could not be dislodged by means of the forceps, even after peforation of the vault of the cranium. With the forceps still applied to the fetal head, symphysiotomy was performed and the child extracted. Incisions were made on either side of the vulvar outlet to facilitate the delivery of the head. The principles of antisepsis had been rigorously observed, although the surroundings had been most unfavorable. There was considerable hemorrhage. The symphysis was reunited by means of a strong silk suture. The patient did well for a day or two; then the temperature began to rise, the respiration became accelerated, diarrhea set in, and the wound and the vagina presented manifestations of gangrenous lymphangitis, to which pneumonia of the left base became superadded, and the woman succumbed on the fifteenth day after the operation.

The Transmission of Cholera through the Intermediation of Flies.—SAWTSCHENKO (*Centralbl. f. Bakteriologie u. Parasitenk.*, xii, 25, p. 893), has found that virulent cholera-bacilli appear for at least four days in the intestinal canal and dejections of flies that have been fed cultures of cholera-bacilli or the intestinal contents of cholera-patients or cholera-victims. There is evidence not only that the bacilli pass through, but also that they undergo multiplication in the intestinal tract of the flies. The greater the interval between the time of infection and the examination of the excrement, the smaller the number of saprophytic organisms found and the larger that of the cholera-bacilli. Control-experiments with the excrement of flies that were not exposed to infection gave negative results. It would thus seem demonstrated that flies may act not only as the carriers, but also as the hosts of the cholera-infection. This fact will, perhaps, explain the occurrence of epidemics during dry and hot weather, as well as a relative diminution in the number of cases after a heavy rainfall or decline in temperature.

A Delicate Test for the Presence of Albumin in Urine.—SPIEGLER (*Centralbl. f. klin. Medicin*, No. 3, 1893, p. 49) has modified the formula originally proposed by him for the detection of minute quantities of albumin in the urine (see THE NEWS, August 27, 1892, p. 246) by substituting glycerin for sugar, as the former is less readily reduced than the latter, and the resulting solution is the more permanently active. The modified formula, then, contains: Tartaric acid, 1 part; mercuric chlorid, 2 parts; glycerin, 20 parts; and distilled water, 50 parts. It is claimed that 1 part of albumin in 350,000 can be detected with this solution, when fresh; and 1 part in 250,000 when the solution is not fresh. The urine must, in every instance, be first treated with concentrated acetic acid, and, if turbid, be filtered to remove the mucin present. The test is not available if the urine contain iodin in any form, as this halogen will combine with the mercury in solution and give rise to the formation of a whitish or yellowish ring at the line of contact, which, however, is soluble in alcohol.

Post-marital Amblyopia consists in failure of vision of variable intensity consequent on sexual excess. The liability of certain persons to this form of amaurosis has long been recognized, and though probably of rare occurrence, it deserves to be made widely known on account of the prognostic importance of a correct etiological deduction. In the last number of the *Archives of Surgery* MR. JONATHAN HUTCHINSON relates three very typical examples of this affection, the most remarkable feature whereof is the readiness with which it is recovered from. In this respect post-marital amblyopia presents a striking resemblance to tobacco amblyopia, of which recovery and freedom from relapse are very definite features. It differs from the latter in being much more rapid in its development and in passing to a far higher degree of amblyopia. Though recovery is the rule, it must not be forgotten that in both series cases may and do occur in which the disease advances to complete and permanent blindness.—*Medical Press and Circular.*

Symphysiotomy.—REGNIER (*Centralblatt f. Gynäkol.*, xvii, 6, p. 108) has reported the case of a deutipara, twenty-nine years old, with a flat rachitic pelvis, of which the true conjugate measured 2.88 inches. The first pregnancy terminated in the delivery of a living child at term by means of the Cesarean operation. When, at the termination of the second pregnancy, labor set in, symphysiotomy was determined upon and carried out, a separation of 2.1 inches being secured. It was deemed best to suture the symphysis by means of silver wire. The child was a male. The result was successful, both for parent and child.

A Hitherto Undescribed Symptom of Hereditary Syphilis.—CARINI (*Internationale klinische Rundschau*, vii, 1, 3 4) reports nine cases of hereditary syphilis, in which the earliest symptom of the specific infection observed was singultus. This resisted the usual treatment for the affection, but speedily yielded to the administration of potassium iodid to the nursing parent and of mercuric chlorid to the infant. The manifestation is thought to depend upon the calling into activity of a neuropathic tendency as a result of the toxicity of the blood.

A Delicate Test for the Presence of Biliary Coloring-matter in the Urine consists, according to ROSIN (*Berliner klin. Wochenschr.*, No. 5, 1893, p. 106), in overlaying a small quantity of urine with a solution of one part of tincture of iodin in ten parts of alcohol. If biliary coloring-matter be present, a grass-green ring forms at the line of contact of the two fluids; in the absence of the biliary coloring-matter urine is simply decolorized at the line of contact.

The Vitality of Comma-bacilli.—As the result of a biologic study UFFELMANN (*Berliner klin. Wochenschr.*, 1893, xxx, 7, p. 158) found that comma-bacilli possess considerable resistance to cold. They survive exposure to a temperature of 12.6° F.; the result depends upon the intensity of the cold and the duration of the exposure. A decided difference was observed in the behavior of recent and of old cultures.

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A NEW STUDY OF THE ACTION OF CHLOROFORM.

IN some recent numbers of the *British Medical Journal*[1] there is a tedious and not very lucid account of some physiologic experiments with chloroform. It is believed by DRS. GASKELL and SHORE, the authors of these studies, that their results support, if they do not prove, the following proposition: "*That the fall of blood-pressure caused by the administration of chloroform is due primarily to a weakening of the heart's action and not to paralysis of the vasomotor center.*" There is truth, undoubtedly, in this proposition, as we have had occasion to point out in a recent issue of THE NEWS. Nay, we think that proof much neater and clearer than any afforded by the papers before us exists in the *Memoirs of the French Academy of Medicine* and elsewhere in the writings of the French physiologists. But DRS. GASKELL and SHORE, our present authors, have a liking for a method the very reverse of neatness and clearness, for a method plentifully bespattered with blood and brains, for work in which lucidity is depised, in which the clear element is separated from the dense by a line "palpable to feeling as to sight."

In a prolix account we are introduced to some new and ingenious experiments. They are original with our authors, as we are told in a solemn letter,[1] and are contrived on the following plan. We quote from the *British Medical Journal*, January 28, 1893, p. 165:

"In order that chloroform, when inhaled in the ordinary way, could be carried to the brain only, or to the heart only, the circulation through the brain was separated from the general circulation, and a supply of blood obtained from another animal. . . . In general the method adopted was to connect the cerebral ends of one or both carotids of the animal whose cerebral and general circulatory systems were to be separated, and this animal we will speak of as the *fed*, and the cardiac ends of one or both carotids, which we will call the *feeder*. . . . The remaining brain arteries of the fed were ligatured. One external jugular vein of the fed animal was similarly cross-connected to the cardiac end of one external jugular of the feeder, and the other external and the two internal jugulars of the fed animal were ligatured. . . . The larger animal was, when possible, always selected for the feeder. In most cases the external carotids of the fed animal were ligatured, so that the internal carotids received all the blood derived by cross-connection with the common carotids of the feeder. In all cases an adequate supply of blood was left to the brain of the feeder, for in no case were its vertebral arteries interfered with. . . . The blood-pressure in the general circulatory systems of both animals was registered from the femoral arteries.

In the feeder the blood-pressure was generally low; in the fed, on the contrary, the blood-pressure was generally high, for in preparing this animal for the cross-circulation—

"the ascending cervical artery on the right side was ligatured, and the two carotids, which had been connected to the left carotid of the feeder, were still clamped. The left vertebral and the left subclavian were also tied, the ligature of the latter vessel, which was even placed proximal to the origin of the vertebral, being to prevent any possibility of blood passing by the ascending cervical arteries from reaching, by anastomoses, the upper part of the vertebral. Thus the right vertebral was the only vessel left for the supply of blood to the brain."

We are assured that this terrific process of cutting and clamping resulted in no evil effects, except in one case:

"where the last brain artery was, by mistake, tied before the clamps on the connected vessels were removed. The 'fall of pressure in the feeder does not always occur.' . . . The rise of blood-pressure in the fed animal reaches it maximum rather quickly, and remains fairly constant."

Lastly, we come to the following laughable statement:

"Eight cross-circulation experiments were made, three

[1] A Report on the Physiological Action of Chloroform, with a Criticism of the Second Hyderabad Chloroform Commission, by W. H. Gaskell, M.D., F.R.S., and L. E. Shore, M.D. British Medical Journal, January 21, 28, and February 4, 1893.

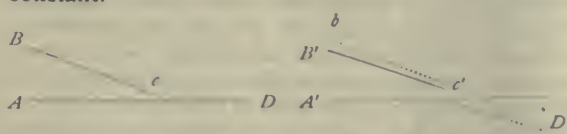
[1] Lancet, February 18, 1893, p. 386.

with two dogs, three with two rabbits, and two where the attempt was made to supply the brain of a rabbit with blood from a dog. This last procedure was unsuccessful, as the rabbit in both cases died very soon after the cross-circulation was established."

As soon as the cross-circulation, which seems to have flowed on quietly, was established, chloroform was administered to the feeder by means of a tube fixed in the trachea. In this animal the blood-pressure fell, and anesthesia supervened in 1 min. 20 sec. In the fed the blood-pressure arose, and it was observed that once, at least, the conjunctival reflex in this animal was abolished.

Now, it appears to us that results arrived at in this way are not very satisfactory. Many times in reading the present account of them we have been tempted to exclaim: "*Anceps hic et lubricus locus est.*" The authors of these curious investigations seem to be unacquainted with the limits of the experimental procedure. To them a healthy organism and a maimed organism subjected to the same stimulus will manifest identical phenomena. We think this by no means clear. As a matter of fact, such a principle is true only of physiologic experiments of the simplest kind—of experiments in which the sequence of cause and effect is obviously and necessarily plain. But in expeerimnts like those of DRS. GASKELL and SHORE, there is an element of error present, which may be shown best by an illustration from physics.

A and *B* are two known forces acting together at the point *c*, with a resultant *D*. This resultant is constant.



A' and *B'* are likewise two known forces acting together at the point *c'*, but simultaneously acting with *B'* is the unknown force *b*. The resultant cannot be the same as in the first case. The first case is that in which chloroform, represented in our illustration as the force *B*, is alone acting on the brain of a healthy animal, which we have chosen to represent as the force *A*. In the second case the conditions are the same, *A*, *B*, and *A'*, *B'*, being identical, except that there is an unknown modifying force *b*, at work with *B'*. This modifying force is composed of all those alterative influences active in an organism in process of dissolution.

But let us proceed to make this clear in another way. In any physiologic experiment, when it becomes necessary to act with an animal artificially maimed, or, to use an apt and significant phrase, with the unity of its structure and organic mechanism impaired, there is always an element of error introduced in this way, which must be reckoned with. In experiments judiciously planned and executed this element of error is so plainly and so easily calculable that no one is ever perplexed by it. Such experiments are extremely simple, and achieve great results by simple unvitiated means. They are simple, we say, because they are of such a nature and conception that there can be but one possible explanation of a single phenomenon, or order of phenomena, which are the subjects of investigation. Simplicity of conception, indeed, is the great point in any physiologic experiment, which must needs be inexact in its nature, and in its results difficult of proof. Hence, the great and signal advances in this science are made by experiments in which the sequence of cause and effect is plain, such as SIR CHARLES BELL'S or MAGENDIE'S to demonstrate the functions of the roots of the cord.

But in the experiments which form the subject of our paper the element of error is present, as might be expected, and, unfortunately for the results, cannot be stated in exact terms, being obviously indefinable and incalculable.

Again, in these experiments there is another fallacious element, a multiplicity of possible explanations of a single phenomenon, or order of phenomena; not one explanation capable of proof, but three or four, perhaps mutually exclusive. For, when, to take a pregnant instance, the question is asked: Why may not the rise of blood-pressure, which our authors have noted, be due, for one thing, to a rise of intra-cranial pressure? we are met by the following extraordinary assertions: "These experiments conclusively show that chloroform taken up by the blood in the lungs in the ordinary way and carried to the brain, only leads to a rise and not to a fall of blood-pressure." Observe that in this sentence the fed and the feeder are classed as one an mal. The words: "chloroform taken up by the blood in the lungs in the ordinary way," refer to what takes place in the feeder, while the words: "carried to the brain only," refer to what takes place in the fed.

"This rise can only be due to a *direct* or *indirect* action on the vasomotor center. It cannot be due to increased intra-cranial pressure, which might be caused by more blood coming from the feeder, because it takes

place at a time when the *blood-pressure* of that animal is *tending to fall.* [Italics ours.] Again, it cannot be considered as merely dependent on a diminished supply of blood to the brain, a relative anemia, due to the *fall of the blood-pressure of the feeder*, because the *rise of pressure of the fed* is *usually* established before the *fall* in the *feeder* takes place. Again, the latter [*sic*] is, except late in the administration of the chloroform, only small in extent; while, from observations we have made on the *effect of ligature of the brain arteries successively*, it appears that a large *diminution* of the *blood-supply* of the brain needs to be made to lead to a marked and lasting rise of pressure."

Could there be found in the whole range of medical literature a more confused, absurd, and contradictory passage than this? It proves, if it proves anything at all, that chloroform causes both a rise and a fall of blood-pressure; and such, indeed, is the opinion of our authors:

"These cross-circulative experiments confirm absolutely the previous experiments in which chloroform was injected directly into the circulation. In both cases the blood containing chloroform excites the *vasomotor center and raises the blood-pressure when it reaches the medulla oblongata*, while it depresses the *heart's action and lowers the blood-pressure when it reaches the heart.*" [Italics ours.]

In these sentences, as in the others that we have quoted, the two animals of the experiment, the fed and the feeder, are classed together as one animal, as an individual in fact. The confusion here is very obvious. The excitation in the vasomotor center takes place in the fed; the action on the heart, and consequent fall of blood-pressure, in the feeder.

But even this is not accurate speaking. The excitation of the vasomotor centers, if it take place at all, must take place in both animals, but in the one animal—the fed—there is the excitation of the vasomotor center, and nothing else, and in the other animal—the feeder—there is, besides the vasomotor excitation, the action of chloroform on the heart and circulation. Can these two actions be conceived of as not influencing each other? We think not. To do so is to ignore well-known facts.[1] Besides this, the conditions of the two animals of the experiment are wholly different. We have already noted some of these differences, and there are others. There is the difference in the vascular tension; there is, also, the difference in the size and structure of the blood-corpuscles, for dogs and rabbits were both used. The effect of dog's blood on a rabbit's brain is a case so curious that we shall forbear to discuss it.

[1] See the investigations of M. Francois-Franck.

And can we then, even in fact, class the two animals of the experiment as one, and accept the result? Evidently not. The proof of this, and indeed the best proof of the unsoundness of this method of investigation is that by using the same means, the same procedure, the same organisms and stimuli, we may obtain precisely opposite results, as SURGEON LAWRIE has done.[1]

And what bearing can the results of investigations so confused and incoherent in character have on the great question of the action of chloroform on the human heart? The word incoherent, indeed, is a just and truly accurate qualification by which to describe a process of reasoning that applies such results in an analysis of the effect of chloroform on man. But, not even if these results were accurate could they have any practical bearing. To use a legal phrase, they are facts not relevant to the issue, which is the action of chloroform on man; nor are facts relevant to each other.[2] For even if we look at the bare results of these cross-circulation experiments the relation of cause and effect is not very clear. And chloroform never could, under any possibility, be administered to man as DRS. GASKELL and SHORE have administered it in their experiments. And until they succeed in doing this we may safely deny the validity of their method and results.

EDITORIAL COMMENTS.

Achillodynia.—SCHÜLLER (*Wiener medicin. Presse*, xxxiv, 7, p. 241) expresses the opinion that the symptoms of achillodynia (see THE MEDICAL NEWS, Feb. 18, 1893, p. 187) are dependent upon inflammation of a small synovial sac situated between the tendo Achillis and the tubercle of the os calcis. Gonorrhea was present in most of the cases under his observation. A tendency to flat-foot manifested itself after the disease had existed for some time, in consequence of the peculiarity of the gait adopted. The best therapeutic results were obtained from direct injections of a ten per cent. suspension of iodoform in glycerin, with an antiseptic dressing, followed by absolute rest for a week. In recent cases rest, with inunctions of mercurial ointment, sufficed. In obstinate cases incision, with evacuation of the contents of the synovial sac, was practised. If gonorrhea be present it must be relieved.

ROSENTHAL (*Wiener medicin. Presse*, xxxi, 10, p. 366) repudiates the views of Schüller and suggests that in some cases the symptoms of achillodynia may be dependent upon the presence of a neuroma between the tendon and the subjacent structures. He reports an illustrative case, in which, however, the symptoms were unilateral.

[1] THE MEDICAL NEWS, January 14, 1893, p. 53.

[2] Sir James Stephen: "A Digest of the Law of Evidence," Introduction, p. xii.

The painful affection of the feet described by MORTON (THE MEDICAL NEWS, June 20, 1891, p. 704; Oct. 8, 1892, p. 406), and the pododynia of Gross (*System of Surgery*) are different, though, perhaps, allied disorders.

MILLS (*Journal of Mental and Nervous Diseases*, April, 1888, p. 6) has briefly referred to a case which appears to belong in the category of achillodynia.

Temporarily Overridden.—The committee of the New York Academy of Medicine, which went to Albany to advocate a sensible, honest, and scientific plan of dealing with the Croton-water supply, has been contemptuously disregarded by the legislative rulers of this ring-ridden city and State. The committee proposed a commission of five scientific experts, who should be fitted by knowledge, experience, and public interest to deal with the problem in such a way as to prevent the pollution of the water-supply, and thereby a possible appalling calamity. The committee vainly urged that "The history of every cholera-epidemic has been the same, and no sane person doubts but that with an unguarded water supply for the city of New York, and a few cases of cholera among, for example, the Italian laborers employed on railroads and other works in Westchester, Dutchess, and Putnam Counties, it will be not alone twenty or fifty thousand inhabitants of this city who will perish, but we shall have established here in the United States an uncontrollable and inexhaustible reservoir of disease whence by every known line of travel the epidemic will spread to the furthest confines of the country."

The Senate thereupon passed the Ring's bill, and Tammany laughs at the defeat of every consideration of decency and public rights. Such displays are plainly the beginning of the end. The community will hardly endure much gambling with its health and life.

The Modern St. Peters.—The physicians, the homeopaths, and the eclectics of Connecticut have united to try and get some kind of a law passed that shall prohibit the State from becoming the Scamps' Asylum for all of the medical quacks and frauds driven out of other States. These, of course, made quite a "respectable" showing at the hearing of the measure. One of the arguments used was drawn from the Bible story of St. Peter and the lame man in the Temple. "If," said this wonderful advocate, "there had been a medical practice bill then, some one of the regulars would have said, 'Peter, have you a certificate from the health board of Judea?' 'No.' 'Peter, have you passed an examination in anatomy, physiology, medical chemistry, obstetrics, hygiene, surgery, pathology, diagnosis, and therapeutics, including practice and materia medica?' 'No.' 'Then we'll fine you $100 for treating this man without a certificate, and if we catch you doing it again we'll fine you $200 and give you six months in the Jerusalem jail.'"

The comparison of the modern medical mountebank with St. Peter might more truthfully, if not more modestly, have been limited to the fact that whereas Peter is reported to have lied three times, his would-be-imitator has never been known to tell the truth.

The Central Hospital of Philadelphia, just established at the corner of Broad and Race Streets, has instituted an innovation in its administration that is worthy of all praise and imitation. This consists in holding evening clinic-services from 5.30 to 8 o'clock, for out-patients. It is noteworthy that in all the popular zeal for charity and medical help of the poor, it has escaped attention that for a working man or woman to quit work to attend the dispensary in the daytime, often really puts him or her to serious inconvenience and to a greater expense in lost time than would result from the call at the physician's private office. A large proportion of dispensary patients have such slight ailments, or they consider them so slight, that rather than lose time from work, they neglect to seek medical advice until the disease has become serious. Taken in their incipiency many affections are aborted. The evening service thus becomes a true charity, and the remarkable success of the Central Hospital clinics, even in these first weeks of the work, is proof that the public perceives the motive of true philanthropy and the skill of the physicians—a most excellently chosen corps—in charge of the clinics.

Infanticide in Private Lying-in Houses.—Coroner Ashbridge, of Philadelphia, says that infanticide in the city is rapidly increasing. The increase in public cases of exposed children, etc., is manifest, but he plainly says that the concealed cases are still more rapidly growing in frequency. "Most infanticides are traceable to the private, unlicensed, and practically irresponsible lying-in houses with which this city swarms." He urges that all these houses should be put under legal surveillance, and that, furthermore, a public lying-in hospital be established. This is one of the most terrible problems that civilization has to face. It is clear that with the assumption by the public of the care of illegitimate children, the number of the illegitimate will tremendously increase; at the best it is a doubtful remedy suggested by Mr. Ashbridge. Whether the misery of infanticide is greater than that attendant upon a large number of illegitimate births, with the lessening of the sanctity of the marriage tie, is a question demanding great care in the answering.

Municipal Cleanliness.—By a largely increased mortality New York is learning anew the punishment of filthiness. Although the statistic lessons may not be as clear and striking elsewhere, the law must hold good that cleanliness is not only a matter of esthetics, but also a matter of life and death. Chicago, with her 3400 or more deaths within two years from typhoid fever alone, preaches the same eloquent lesson as to the relative value of cleanliness and of godliness. It is time, and past the time, that we set about a vigorous municipal house-cleaning. "It is an ill bird that fouls its own nest." It is almost incredible that with all our civilization we have not practically solved the simple questions of the removal and disposal of our own filth, but that great cities make sewers of their rivers and drink the diluted and diseased excreta.

Cholera and Water-supply.—The population of Hamburg and of its neighboring town, Altona, is about 750,000. Both cities make the river Elbe their common sewer. The water-supply of both is drawn from the contaminated river, that of Altona being more deeply and certainly

polluted than that of Hamburg. In Hamburg, last year, there were about 18,000 cases of cholera, with 7611 deaths reported, but Altona escaped with 562 cases and 328 deaths. It is believed that the escape of Altona is due to the fact that the more filthy water was comparatively freed from disease-germs by filtration through sand beds before it enters the city pipes. The less noxious water of the Hamburgers was not sand-filtered. The lesson is so clear that extensive filtration-works are being erected at the Hamburg intake.

Precocity Extraordinary.—Dr. Hopkins, of Thomasville, Ga., reports the case of a child, four years and three months of age, who is four feet and three inches high, weighs ninety pounds, with corresponding development of all the bodily organs. Attention is called to the boy of Salamis described by Pliny, who, within his life of seven years, was infant, adult, father, old man, and corpse. When one reflects upon such facts, one is appalled by our physiologic ignorance of the fundamental conditions and causes of our being. The mysteries of heredity and of corporeal development are so utterly impenetrable that the glib conceit of some philosophers, who doubt of nothing, is beyond contempt or pity.

The Prevention of Cholera in Minnesota.—A clean-cut law has been passed by the Legislature of Minnesota, providing against the importation, by transportation companies, of those infected with cholera or other infectious disease. The State's sanitary officers are empowered to detain, in quarantine, all vessels or railway conveyances in which such diseases may be found; to disinfect and fumigate at the expense of the railway or ship company; to fine and punish carelessness on the part of the companies, to isolate the passengers and their effects, and otherwise prevent the importation within the State of those affected with contagious disease.

Scandal-mongering Coroners.—A poor girl kills herself, and to feed the voracious appetite of the filth-loving public the coroner and his physicians divulge medically doubtful, and morally pernicious, details of the post-mortem table. What human right have physicians to increase the agony of the parents and the monomania of the salacious by such betrayals of trust? Members of the profession who thus besmirch us all should be told by their fellows what is thought of them.

Trichinæ in Hogs.—According to the investigations of the Laboratory of Natural History of the University of Iowa, the animals showing the largest number affected with trichinæ—about one in every ten—are those fed on slaughter-house offal. The next in order are the hogs kept in pens by private families. Those that roam large fields and that are fed on corn are almost entirely free.

Experiments with Cholera-Germs.—Two or three months ago Dr. Hasterlik, of Vienna, together with four others, for purposes of experiment swallowed doses of pure cultures of cholera-spirilli. In some, diarrhea and a slight rise of temperature followed, but all recovered without serious illness. The bacilli were found in the excreta in each case.

Education of the Deaf and Dumb in England.—There seems to be a hopeful outlook in England for education of the poor deaf and dumb, at the public expense. A bill will soon be introduced to this effect. The number of these unfortunates is increasing.

The Medical Profession of Cincinnati, O., has been aroused as to the duty of harmony and organization. An enthusiastic meeting, largely attended, has resolved to secure a permanent meeting-place, and funds therefor were subscribed.

SOCIETY PROCEEDINGS.

THE NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, March 7, 1893.

DR. M. ALLEN STARR, PRESIDENT, IN THE CHAIR.

DR. FREDERICK PETERSON presented a case of Clonic Spasm of the Muscles of Mastication. The patient was a woman, fifty-seven years old, who six years previously had her upper teeth removed and replaced by artificial ones. The first set did not fit well, and a new one was substituted. The spasm developed as a result of the manipulations about the mouth, and of the necessity for keeping the mouth open for long periods of time. When sitting quietly and not using the muscles of the jaw, there was a continuous clonic spasm of the masseters, temporals, and pterygoids. The jaw opens and shuts slightly, and moves from side to side. The chief difficulty, however, is encountered in attempts to speak; then the mouth opens widely and there is a subluxation of the jaw downward and forward. During the first six months the mouth would not close at all, excepting at night, when the spasm relaxed.

Dr. Peterson said that while tonic spasm of the masticatory muscles, or trismus, is quite a common symptom, the condition presented in this case is very rare. As regards treatment, atropine, hyoscine, conium, and electricity were used perseveringly, without any noteworthy effect. Latterly, duboisine sulphate, in doses of gr. $\frac{1}{200}$, three times daily, has afforded much relief by quieting the spasmodic movements almost wholly at times. In addition, the woman wears an apparatus that keeps the jaws in apposition, and allows her to talk between her teeth, without the uncomfortable tonic spasm of the depressors of the jaw, although the clonic movements of the masseters and pterygoids may keep on as before.

DR. WILLIAM M. LESZYNSKY stated that he had seen a case of clonic spasm of both platysmæ, following prolonged manipulation of the lower jaw by a dentist. The spasm lasted only three or four days. Slight spasm of the muscles of the jaw after dental operations is not uncommon.

DR. EDWARD D. FISHER presented a case of Rhythmical Spasm of the Extremities. The patient was a woman, forty-three years old. The attacks had taken place for about a year. The spasm is sometimes confined to one or both arms, or to the lower extremities, or the motion may involve all the limbs at the same time. The attacks come on spontaneously, and last about five minutes. A number may occur during the day, or the patient may remain free for a day or two. The muscles are becom-

ing hypertrophied and more rigid, and it is difficult to bend the elbow or the arm. The woman complains of fatigue. Various methods of treatment, including hypnotism, have been employed, but without apparent effect. It seems impossible for the woman to control the spasm. There is no analgesia. Hysteria was thought to be the basis of the attacks.

DR. J. E. CULVER read a paper on "Innervation and the Functions of the Sympathetic Nerves." He reviewed at length the distribution and functions of the sympathetic nervous system, and traced the relationship between its disturbed innervation and the interference with respiration, oxidation of the blood, and other physiologic processes.

DR. WILLIAM H. THOMSON read a paper on "Basedow's Disease." He stated that the progress of pathology often illustrates the disadvantage of the premature naming of diseases after some common or prominent symptoms, for further knowledge may show much wider relationships than were at first suspected; and in some cases these symptoms may be absent. Under such circumstances the symptomatic name may operate to prevent a correct diagnosis. The name exophthalmic goiter has had much influence in preventing the recognition of Graves's disease in many instances, and still more in confusing the views as to its pathology. The conception of some textural lesion in the nervous system to account for the exophthalmos and goiter has diverted investigation and speculation, in seeming forgetfulness of the fact that these symptoms are not essential to the affection, for they may exist in the absence or be absent in a case of Graves's disease. A safe rule to follow in the study of pathologic problems is to seek first for the most constant characteristics of a given affection rather than for the most obtrusive ones. Thus, the most uniform condition in Graves's disease is what may be correctly described as a state of marked agitation. In many instances this is for a long time a purely physical state, not involving the mind or the spirits, and yet the patient acts as if greatly alarmed about something. As a consequence, many writers consider fright a leading cause of the disease. We are thus at the outset diverted from the study of a characteristic condition to that of an occasional element in the clinical history of the affection.

Dr. Thomson then detailed the histories of eight consecutive cases of Graves's disease. In none was fright or other emotion an element of the clinical history. With two exceptions, all were unusually free from causes of mental strain or depression. Exophthalmos and goiter were absent in one case; exophthalmos alone was absent in five. Goiter was absent in one, while in another it was only slightly present late in the disease. Both exophthalmos and goiter were marked only in one case. In all the cases there was pronounced tachycardia and muscular tremor. Emaciation was marked in five and moderate in three; in four, imperfect inspiratory power was noticed.

The rapidity of heart-action and the muscular tremor are the first symptoms to develop and the last to disappear, and, together, they constitute the most invariable elements of the disease. Attention should, therefore, be particularly directed to them as the most closely related to its pathology, and the most important practically—as the earlier the disease is recognized, the better for the patient. A paralytic lesion, involving the common nucleus of the glosso-pharyngeal, vagus, and spinal accessory nerves, and extending to the neighboring vasomotor center in the medulla, would account for the whole group of symptoms that make up the picture of Graves's disease. Simple irritation of the lower branches of the glosso-pharyngeal and of the superior laryngeal nerves is sometimes accompanied by general muscular tremor. Such a bulbar lesion would also explain the tachycardia and the universal relaxation and throbbing of the systemic arteries. It would also explain the interference with the inspiratory expansion. Such a lesion would not, however, account for the exophthalmos or the goiter, and actually evidence is wanting of a constant textural lesion in the medulla, either of the centers mentioned or of other parts. No characteristic anatomic change has yet been discovered which can be causally associated with the genesis of Graves's disease, and the origin of the malady must be looked for elsewhere. In this connection clinical experience may furnish aid. Persistent diarrhea is a common symptom in Graves's disease. In the cases reported, astringents and other drugs had little effect in checking the diarrhea, while a change of diet at once brought about an improvement in all the symptoms.

Dr. Thomson stated that he mainly relies on the dietetic treatment of Graves's disease, and with such favorable results that he has little doubt that a specific disorder of intestinal (in distinction from gastric) digestion is the primary factor in the genesis of the affection. While a structural lesion in the medulla that would account for the phenomena of Graves's disease is almost inconceivable without involvement, sooner or later, of all the vital functions of that important part, particular functional derangements, produced by toxic agents of intestinal origin, are just what might be expected; for nothing is more characteristic than the narrowly selective operation of functional nervous poisons, which may go on for years, as in the case of opium, affecting certain functions, without producing either progressive changes in them or extension to other functions. One fact in Graves's disease which points much more distinctly to a digestive disorder than to a structural nervous lesion is that it occurs in women about ten times as often as in men. That the digestive apparatus in women is subject to special disorders is well known.

Dr. Thomson stated that he has not yet seen a severe case of Graves's disease in which diarrhea was not, sooner or later, a pronounced symptom. As regards the diet in these cases, the amount of meat taken should be restricted, and milk, in some acceptable form, should be substituted. Medicinally, intestinal antiseptic remedies are to be employed, together with the tincture of strophanthus as a vasomotor tonic.

DR. E. C. SEGUIN expressed the belief that while there are undoubtedly cases of Graves's disease in which one or two of the three prominent symptoms — exophthalmos, goiter, and tachycardia—are absent, the number of cases in which the principal symptoms are those relating to the circulation had been rather exaggerated. The cases in which the only gross symptoms are the rapid heart-action and the tremor are comparatively rare. On the other hand, there are cases which present these

symptoms, to which he would hesitate to give the name Graves's disease. Many cases of disease of the heart, with dilatation or tachycardia, are likely to be associated with muscular tremor and considerable nervousness. There are other symptoms to assist in arriving at a diagnosis of Graves's disease. One is the character of the pulse. The mere fact of the pulse being rapid is not in itself characteristic of Basedow's disease; it should possess a quality of tension and smallness which to the experienced finger is of value in making the diagnosis. Then, again, the temperature, taken in the axilla, is invariably raised from one-half to one degree F. As to the pathology of the disease, the theories as to the location of a lesion in the central nervous system or in the medulla are not satisfactory. As to locating the general cause of the disease in the intestinal tract, no positive conclusions can be drawn, for the reason that diarrhea is by no means a frequent symptom in Graves's disease. Furthermore, the diarrhea does not appear to be fermentative in character; it is, on the contrary, of a paralytic nature, the evacuations being large, liquid, and frequent. Dr. Seguin referred to the value of aconitine in treatment.

Dr. B. Sachs stated that he has found the "rest treatment" extremely beneficial, the heart's action becoming better and the goiter diminishing in size. In addition to rest, he puts the patient on a light diet, consisting principally of milk and eggs.

Dr. Mary Putnam Jacobi referred to three cases in which depressing emotions had preceded the development of exophthalmic goiter. In one of these, a very severe case, the patient was a woman, aged twenty-two years, whose marriage engagement was broken by the sudden death of her *fiancé*. She rapidly developed the three typical symptoms of Graves's disease, with intense anorexia and diarrhea. She remained in a state of great prostration for six months, and subsequently recovered after marrying somebody else. Following her second pregnancy her symptoms reappeared. She was at that time living almost entirely on champagne, which seemed to greatly intensify the symptoms. The diarrhea did not appear to add to her prostration. The patient was put on a meat-diet, and the pulse rapidly fell from 150 to 90 per minute, and she regained her strength. In another case, occurring in a woman forty-two years old, the symptoms appeared after prolonged family troubles. The third case was also in a woman, a domestic servant, who developed the symptoms after prolonged nursing of her mistress, to whom she was much attached.

Dr. Joseph Collins said that if a toxic origin were ascribed to exophthalmic goiter, the prognosis would be less unfavorable than it is. In some experiments he has found that complete extirpation of the thyroid gland is almost invariably followed by death. This would controvert the idea that the function of the gland is a metabolic rather than a secretive one.

Dr. A. D. Rockwell referred to the value of digitalis in cases in which there is a weakness of the myocardium; he has found the drug very serviceable, in combination with iron, zinc, and ergot. He also referred to the value of electricity; in order to do any good, the current must be sufficiently powerful. In reply to a question, Dr. Rockwell said that the diminished resistance to the electric current is probably owing to the perspiration and to the better conduction due to the rapid circulation.

The President expressed the belief that no explanation thus far given will cover all cases of exophthalmic goiter, and it is doubtful that a single explanation will be found for all cases of any functional nervous disease. In two cases of Graves's disease recently under observation, sudden fright was too immediate to be anything but causative. One of the patients, a woman, saw her baby fall from a second-story window. She was immediately seized with palpitation, and within two weeks developed exophthalmos and goiter. She presented an interesting symptom that has been referred to by Charcot, a sudden giving out of the limbs—astasia. After such a collapse she is perfectly able to rise and walk away. In another case, the symptoms developed suddenly in a patient after she had narrowly escaped being run over by a street-car.

Dr. Thomson, in closing the discussion, said that he did not mean to imply that fright and depressing emotions do not repeatedly furnish the occasion for the first development of the symptoms, but it is important to separate occasions from causes. The tremor of Graves's disease is characteristic; it is different from the tremor of any cardiac affection. It is not maintained that there is a lesion in the medulla to account for the symptoms; the absence of such a lesion gives support to the toxic theory. The relapsing nature of Graves's disease is opposed to the idea of a structural lesion.

Cases attended with a pulse of high tension are associated with albuminuria. In Graves's disease there is a dilatation of the arteries throughout the body, and dilated arteries and a pulse of high tension do not go together. The elevation of temperature is slight, such as may be present in any serious neurosis, but it bears no proportion to the rapidity of heart-action, and the affection may be essentially regarded as a non-febrile disease.

CORRESPONDENCE.

YELLOW-FEVER INOCULATION.

To the Editor of The Medical News,

Sir: The sharp practices engendered by the associations of Washington City have enabled a prominent member of the medical profession in this country to forestall and checkmate the legitimate outgrowth of the facts presented by Domingos Freire in regard to the results of yellow-fever inoculation in Brazil. But the old maxim of *magna est veritas et prevalebit* still holds its place in the developments of the efficacy of inoculation as a preventive of yellow fever.

The data presented in my article entitled "Facts *versus* Fiction Touching Yellow-fever Inoculation," which appeared in *The Journal of the American Medical Association* for March 22, 1890 (reprints being on hand) are fully corroborated by a report of the recent work of Domingos Freire in the city of Rio de Janeiro, where the good results of inoculation are clearly shown. The following is translated from the *Jornal de Brazil*, of Rio de Janeiro, January 28, 1893:

"Vaccination Against Yellow Fever.

"Dr. Domingos Freire writes us: 'The total number of inoculations for the prevention of yellow fever during

the epidemic of 1891-92 was one thousand, distributed as follows: 81 in Nitheroy; 28 in Barra Uansa; 38 in Rezende; 34 in Paralujba do Sul; 818 in Rio de Janeiro.

"'There were 377 foreigners and 623 natives. The foreigners were of the following nationalities: Portuguese, 220; Italians, 81; Spaniards, 30; French, 29; Austrian, 5; Argentine Republicans, 3; Eastern, 3; German, 1; Englishman, 1; Pole, 1; Russian, 1; Swede, 1; North American, 1.

"'Of the Brazilians inoculated the following provinces were represented by the number opposite the name:

"' Rio de Janeiro (city)	399
" " (state)	123
Minas Geraes	26
Parahyba do Norte	16
Rio Grande do Sul	14
San Paulo	15
Espiritu Santo	3
Pernambuco	4
Alagoas	3
Matto Grosso	2
Ceará	2
Pará	1
Paraná	1
Bahia	13

"'Nearly the total number were in the most probable condition to contract the disease. The great majority had been in Rio de Janeiro varying from a few days to four years. Then, in calculating the lowest period of receptivity, it is put down as five years' residence in the infected place as the minimum period for acclimatization. The individuals inoculated lived, for the most part, in the streets where the disease had become most widely developed.

"'The mortality among those inoculated was 0.8 per cent. (eight-tenths of 1 per cent.).—During the same epidemic there died about four thousand people who had not been inoculated. From 1883 to 1892 there have been 11,881 inoculations to prevent yellow fever, with a mortality of 0.5 per cent. (five-tenths of 1 per cent.).

"'The results of the inoculations show that this prophylactic means has a real efficacy.'

"Shortly we expect to publish in all their details the statistics for 1891–92."

I am, Sir, respectfully yours,

J. MCFADDEN GASTON, M.D.

ATLANTA, GA.

NEWS ITEMS.

Section on Hygiene, Climatology, and Demography of the Pan-American Medical Congress.—Persons proposing to present papers before this Section are requested to communicate with either of the undersigned *immediately*, that titles of subjects may be properly classified for the program of the proceedings of the Congress. The only limitation as to subject matter is that it shall have a sanitary, climatologic, or statistical bearing. Members of the Section on State Medicine of the American Medical Association, the American Public Health Association, the American Climatological Association, the American Academy of Medicine, and of State and Municipal Boards of Health are especially invited to contribute the results of their several experiences. The languages of the Congress being Spanish, Portuguese, French, and English, papers may be presented in either, to be translated in the others, for which reason their text should be in the hands of the Secretaries at the earliest possible date. Albert L. Gihon, M.D., President, 145 East 21st Street, New York City; Pedro José Salicrup, M.D., Secretary (Spanish), 129 East 17th Street, New York City; Peter H. Brice, M.D., Secretary (English), Toronto, Canada.

International Semmelweiss Memorial.—Subscriptions are solicited to the memorial in honor of SEMMELWEISS, to be erected in his native city, Budapest, in recognition of his services to antiseptic midwifery (*Die Aetiologie der Begriff und die Prophylaxis des Kindbettfiebers*, 1861). The American members of the committee having the project in charge are: Dr. H. R. Bigelow and Dr. Barton Cooke Hirst, of Philadelphia; Dr. John S. Billings and Dr. A. F. A. King, of Washington, D.C.; Dr. E. W. Cushing, Dr. C. M. Green, Dr. Henry O. Marcy, Dr. L. W. Richardson, Dr. A. D. Sinclair, and Dr. W. Storer, of Boston, Mass.; Dr. W. W. Jaggard, of Chicago; Dr. J. H. Kellogg, of Battle Creek, Mich.; Dr. W. W. Potter, of Buffalo; and Dr. A. J. C. Skene, of Brooklyn. Dr. J. Elischer, Petöfi-tér 1, Budapest, Hungary, is the Treasurer, to whom subscriptions are to be forwarded, or to any of the American members of the committee, or to the editorial office of THE MEDICAL NEWS.

Anatomical Section of the Pan American Congress.—The following physicians have been appointed members of the Advisory Council: Dr. F. Mall, University of Chicago, Chicago; Dr. Charles S. Dolley, 3707 Woodland Ave., Philadelphia; Dr. Edward K. Dunham, Carnegie Laboratory, New York; Dr. Elizabeth B. Bundy, Woman's Medical College, Philadelphia; Dr. Wm. M. Gray, Army Medical Museum, Washington; Dr. H. C. Tinkham, University of Vermont, Burlington, Vt.

The American Climatological Association will hold its tenth annual meeting in Philadelphia, May 25th, 26th, and 27th.

Members having papers to present are requested to communicate with the President, Dr. R. G. Curtin, 22 S. 18th Street, Philadelphia, or the Secretary, Dr. J. B. Walker, 1617 Green Street, Philadelphia, at as early a day as possible.

The Section on Dermatology and Syphilography of the Pan-American Medical Congress has been fully organized, with Dr. A. H. Ohmann-Dumesnil, of St. Louis, Mo., as Executive President, and Dr. William S. Gottheil, of New York, as English-speaking Secretary, and Dr. John Forrest, of Charleston, S. C., as Spanish-speaking Secretary.

New York Eye and Ear Infirmary Reports is the title of a volume of original articles by the members of the surgical staff of the New York Eye and Ear Infirmary, successive numbers of which will appear as the material shall be collected. Part I of Volume I contains 111 well-printed and well-illustrated pages.

Error.—The title of Dr. Tyson's paper, p. 307, THE NEWS, March 18, should have been "Two Cases of Cystin Calculus," instead of "Two Cases of Cystic Calculus."

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

DIPHTHERIA—A CLINICAL STUDY.[1]

BY WILLIAM P. MUNN, M.D.,
OF DENVER, COL.,
ASSISTANT PROFESSOR OF GENITO-URINARY DISEASES AND CLINICAL SURGERY IN THE UNIVERSITY OF DENVER; GENITO-URINARY SURGEON TO THE ARAPAHOE COUNTY HOSPITAL; PHYSICIAN IN CHARGE OF QUARANTINE, AND ASSISTANT HEALTH-COMMISSIONER OF THE CITY OF DENVER.

(*Concluded from page 316.*)

TREATMENT.—The rational and successful treatment of a disease so varied in its manifestations and so various in its intensity as is diphtheria must not be entirely empirical, but must be based upon a knowledge of its pathology. The aim of treatment must be to combat those conditions or to abort those processes that result in death.

The modes of death from diphtheria may be classified with more or less exactness as follows:

A. *From systemic causes:*

1. Inanition
   - Non-assimilation
     - Inability to digest.
     - Inability to absorb.
   - Inability to partake
     - Paralysis of the muscles of deglutition.
     - Inflammation of the fauces.
     - Obstruction by membrane.
   - Neglect of feeding.
2. Septic conditions
   - High temperature. Rare.
   - Hemorrhage due to lack of vitality of capillary walls.
   - Coma.
   - Degeneration of the blood.
3. General paralysis. Very rare.

B. *From local causes:*

1. Stenosis of larynx
   - By membrane.
   - By foreign body, on account of paralysis of muscles of deglutition.
2. "Heart-failure"
   - Fatty degeneration of heart.
   - Degeneration or inflammation of cardiac ganglia.
   - Disintegration of blood..
   - Endocarditis.
   - Paralysis of heart, due to central lesions of nervous system.
3. Pneumonia
   - Ordinary.
   - Septic.
   - Membrane-extension.

The conditions here outlined are, in their various modified or aberrant manifestations, almost legion; they may exist separately or at once, and a somewhat elaborate scheme of treatment is necessary in order to combat them. No hard-and-fast line can be drawn as to medicaments or dosage, for they may need to be varied almost from hour to hour. Few diseases—indeed, I am almost prompted to say, no other disease—demands so much or so varied medication, and in no other kind of sickness have I seen medication do so much absolute and incontrovertible good.

There is, however, no *specific* medication for diphtheria. No one remedy can cure all cases or keep up an uninterupted successful record during several successive epidemics or years. Nevertheless, it can be said without fear of contradiction that the general principles of therapeutics, faithfully followed, even in desperate cases, are here, as almost nowhere else, productive of results that are gratifying to both physician and patient.

Inanition must be combated by systematic attention to the diet. Easily-digested and easily-absorbed materials are a necessity, and should be administered with regularity at short intervals. Peptonized milk is of great value; beef-juice, freshly expressed, may be given frequently in small doses; the white of an egg, well beaten, with pepsin added, is easily retained, and may be given either by mouth or by rectum; oatmeal or cracked wheat will often be very grateful to the patient, and may be given freely.

The treatment of the septic conditions must aim (1) to encourage excretion, and especially by such methods as will carry off the toxic products that have been thrown into or formed in the blood; (2) to increase the resisting power of the tissues and especially of the hematic elements; (3) to antagonize the vitality and development of microörganisms, and (4) to destroy or neutralize the chemical products of germ-life.

The remedies that have given me most satisfactory results in meeting the indications just named are calomel, tincture of iron chlorid, whiskey, and mercury bichlorid or biniodid.

The effect of calomel on the system made it years ago the one great remedy in medical practice. An unintelligent prejudice has, during the past generation, kept it from being employed frequently or efficiently; but we are again coming to appreciate the fact that "modification of the secretions and excretions" is an essential of successful medical treatment. Especially is this true of diphtheria, in the therapy of which disease calomel now holds a leading place.

Given in a dosage which seldom needs any limitation until its characteristic effect is produced, I have never seen calomel do harm. But, as the

[1] A paper read before the Denver and Arapahoe Medical Society, December 13, 1892.

dosage is for effect, it should be discontinued or decreased when that effect, as indicated by thin, green bowel-movements, has been produced. Sometimes a total of ten grains, given in doses of one grain every hour, will be sufficient to produce the result. At other times as much as 200 grains will be required.

In answering the question: "What does calomel do and how does it do it?" one must depend partly on facts and partly on theory. The general condition of the patient is improved, the color becomes better, the pulse steadier and firmer, the tendency to coma is less, the bowels and kidneys both act more freely. In the throat it is observed that the spread of the membrane is limited or, at least, the rapidity of its spread is decreased; thick membranes become thinner and thin ones fail to become thick; extension of the disease into adjacent organs, especially into the larynx seems to occur but rarely after the system has been mercurialized. That this accounts for the lessening necessity for operative interference, on account of laryngeal stenosis, in the practice of those who depend upon mercurial treatment of the disease, I am thoroughly convinced.

The manner in which calomel, as well as other mercurials, such as biniodid, bichlorid, or cyanid, produces these effects, I take to be this: *a*, by a cholagogue action, the blood is relieved of toxic materials and the abdominal circulation is stimulated, thus preventing blood-stasis in the spleen and liver, where the final biologic product of the diptheria-germ is largely formed, such formation being favored by stagnation of the current; *b*, the sympathetic nervous system is relieved of the depressing influence of generally-diffused venous and capillary pressure due to stagnation of blood-flow; *c*, the heart itself is no longer gorged with unhealthy venous blood, and acts more freely and with greater force; *d*, the toxic materials in the blood and lymph have their activity lessened or are partly rendered inert by the coagulating action of the mercurials; *e*, the germs themselves are destroyed and the toxic materials contained in them partially neutralized by coagulation; *f*, the changes thus brought about in the blood lessen the tendency to fibrin-exudation, and consequent membrane-formation at the local disease-focus.

It will be noted that this explanation covers not only the therapeutic action of the calomel, but the systemic effect of the mercurial salts. I am in the habit of giving the bichlorid or biniodid (there seems to be no choice between them) in solution or in tablet triturate form, in doses ranging from one-thirtieth to one-tenth of a grain, every one, two, or three hours. For a child of from two to five years old I begin with one-thirtieth of a grain every two hours, lessening the interval to one hour after a few doses, and doubling or trebling the dose at the end of the first or second day. The aim is to bring the system under the influence of the mercury as quickly as possible. When this is done the disease ceases to advance. Then I hold the medication at the dosage reached, or lessen the dose or increase the interval of administration as the case demands.

Of all the cases I have so treated only one was ptyalized. The patient was a female, aged twenty-six, to whom I had been giving one-sixteenth of a grain of mercury cyanid every hour for about one week. Membrane covered the fauces and the palate to within one-half inch of the teeth. In twelve hours the membrane disappeared synchronously with the unheralded appearance of severe ptyalism. There was no re-formation of membrane, but the woman's teeth were loose for many months, and for weeks she had to take a simple "slop-diet." There was no necrosis, and the recovery was ultimately perfect.

Alcoholic stimulants are also of primary importance, here even in greater degree than in other septic diseases. No other remedy is known that is as potent and diffusible. If any other of equal efficacy is ever discovered alcohol may be given up, but not until then.

In the therapy of diphtheria this remedy serves a triple purpose: *a*, It is a stimulant of unequalled efficacy; *b*, it is a readily oxidized food; *c*, it is an antiseptic agent, both locally and systemically. In severe forms of diphtheria it is almost impossible to give too much of it. The dosage must be large, frequent, persistent; never at greater intervals than two hours, often at as short intervals as fifteen minutes, and sometimes, when the patient's vitality is at a very low ebb, its administration may be practically constant, the alcoholic stimulant being, properly diluted, continually administered by means of a medicine dropper.

It is frequently observed that the failing circulation regains its vigor, the sinking patient rallies, as the diffusible stimulant begins to be absorbed; while, as the effect of the dose wears off, the circulation again fails and vitality again becomes enfeebled. The amount of stimulant necessary is of course dependent upon the individual case, but must always be in excess of that given in other diseases. Many patients under six years of age require the administration of an ounce of whiskey every hour for from two to six days, and to several I have given double that quantity, the patients recovering.

I have never yet observed the slightest harmful effect from the administration of alcoholics in diphtheria. In addition to its long-known stimulant properties, and its ready oxidation in the circulation, recent biochemic research has led to the conclusion that in diphtheria, at any rate, it has a

distinct antiseptic action. The albumoses formed in the diphtheric membrane are precipitated and their absorption is prevented by alcohol. The germs themselves are devitalized and the toxic substances already absorbed are probably rendered partly inert by the action of the alcohol, after its absorption into the circulation.

Iron, in the form of the tincture of the chlorid, has long been a favorite remedy in all diseases accompanied by degeneration of the hematic elements. In diphtheria its beneficent effects have also long been recognized. But it is ordinarily given in too small doses. We must not lose sight of the fact that we are not dealing with a simple anemic condition, but with one of profound toxemia, which is acute in onset, malignant in action, and overpowering in its effects.

Remembering these facts, and the additional one that probably not more than half of what is given is absorbed, let us give iron in large enough doses to do good. To children from two to five years old I give from five to ten drops at least every two hours, often every hour; to adults never less than ten minims each hour, and frequently twice or thrice that amount.

The treatment of weak heart is but little different from that demanded for the same condition accompanying other diseases. Digitalis, nux vomica, and strophanthus are the indicated remedies, and to them may be added convallaria, nitroglycerin, caffeine, camphor, and musk; alcoholics are already being administered.

In those cases in which weak heart is practically due to hemorrhage it would seem that transfusion might be resorted to. At least the one-fourth per cent. saline solution should be injected subcutaneously or into the bowels. Such a case was No. CIX of those reported. The boy was eight years old and had apparently completely recovered from a severe attack of diphtheria in which the membrane affected the fauces, palate, and both cavities of the nose. He began to sink suddenly; vomited continuously; his pulse became thready, and disappeared at the wrist fourteen hours before death; his lips were ashen, and he complained of an intolerable thirst, but could not retain water in the stomach. Digitalis and nux vomica were freely given. Hot saline enemas were given, but failed to relieve, and he died thirty hours after the first sign of collapse.

The autopsy revealed only congestion and slight suppuration in each kidney, and about two pints of serous fluid free in the peritoneal cavity. These conditions did not seem to be sufficient to account for death. I have felt that the patient might have recovered if the saline solution had been injected into his veins. Certainly in another case like it I shall resort to the measure.

Albumin in the urine does not seem to me to be an indication that is of any value as bearing upon treatment. In almost all cases the patient is already taking so much medicine for conditions of greater urgency that I do not see that any added medication will be justifiable. Nor does it seem, except in cases of suppuration like the one just cited, that albumin in the urine will have any bearing upon the final result of the sickness. During convalescence, should the albumin persist, I see no objection to the administration of some mild diuretic, like liquor ammonii acetatis. It seems probable, however, that the medication already described is good treatment for albuminuria, and as that is usually being given anyway, the detection or non-detection of albumin is a matter of indifference, so far as modification of treatment is concerned.

An additional remedy for systematic use is hydrogen dioxid. Patients whose lips are bluish-black, and with evidently impeded circulation, are benefited by its frequent free administration.

The ten-volume or fifteen-volume solutions of this drug, as found in the market, are innocuous even in excessive dosage, provided that they are pure. When there is an excesss of acid present, the drug will irritate or even denude the healthy mucous membrane. Of a pure specimen of the drug I give from one to four drams every hour, with the result in many cases of bringing a healthier pink color to lips and cheeks. The oxygen held in solution in the preparation is probably given up in the system, with the effect of promoting perfect oxidation and toning up the vitality of the red blood-corpuscles. Hydrogen dioxid should not be administered in metallic spoons, as they lessen or destroy its activity.

Local Medication.—Recognizing germs as the primary cause of diphtheria, local treatment is directed as follows:

1. Destroy the germs.
2. Neutralize their active products.
3. Limit membrane-formation and destroy what is already formed.

As has been stated, the remedies already recommended for internal administration have a local antiseptic and deterrent action, which must be exerted to some slight extent upon the local disease-focus as they pass over it. This slight action is, however, far from being efficient or sufficient. Energetic measures should be directed to the local trouble. Mechanical removal of the membrane has not given good results, as the violence necessary to accomplish it does harm to the underlying tissues, and the measure itself is ineffectual, new membrane appearing after a few hours. Destruction of the membrane and adjacent tissues by means of the actual cautery has been recently proposed. The proposition seems reasonable, but it is not feasible.

The proportion of patients whose families would permit such an operation at a time when it would prove effectual is very small indeed. Cauterants, such as silver nitrate, ferric alum, carbolic acid, nitric acid, chromic acid and similar compounds, both in strong and weak preparations, have been urgently advocated by some practitioners as invariably successful in removing and preventing reformation of the membrane. I have used silver nitrate and carbolic acid with but little success, and ferric alum with absolutely no success. The other agents proposed for this purpose seem so unsuitable that I have not used them.

Mixtures of iodin and carbolic acid of about 2 or 3 per cent. have been used with success by some practitioners, and I have ventured to rely upon them in a few mild cases, which fortunately recovered. The medication seemed to have no real effect upon the membrane.

The medicaments which have given me the most satisfactory results have been hydrogen dioxid (from three-volume to fifteen-volume solutions), corrosive sublimate, 1:2000 solution, carbolic acid, from 1 to 2 per cent. solution, and lime water. Trypsin and extract of pancreas I have used both in solution and in powder. While efficient, they are not to be compared to corrosive sublimate or to hydrogen dioxid sprayed with an atomizer. These two remedies I find of the greatest efficiency, and they may be used together without trouble. Except occasionally in adults, I have altogether stopped using the swab, as the violence which it does to the tender surfaces of the throat, and the struggles necessary in order to use it, are of great harm to young children, doing more damage than the local medication does good. The atomizer is, perhaps, the most efficient instrument for local medication. All of its tubes should be of rubber; the mouthpiece should be long and stout, the tip broad and with rounded end, so as not to injure the throat. The water-oil atomizer I find most satisfactory.

Very recently, Dr. Williams (Boston *Medical and Surgical Journal*) has recommended the use of very strong solutions of hydrogen dioxid, from fifty to two-hundred volumes, for local application to the membrane. The argument in favor of this method seems most reasonable, but I have not yet had an opportunity to put it into practice. One posssible danger would seem to be that an agent of such a high degree of saturation would be a cauterant to the healthy mucous membrane.

Many authorities recommend the use of the atomizer, swab, or gargle, only every three or four hours This seems to me, perhaps, as bad a recommendation as can be given. In severe cases no medication can be of effect in thinning the membrane or in preventing its spread, which is not repeated, at least every hour, and in a large number of cases it is necessary to spray the throat at least every half hour or every fifteen minutes. This will require the constant attention of the nurse, but it will often save the patient.

When the nose is affected it should be syringed frequently. For this purpose the same solution may be used as for the throat, but I have found that in the nose the 1 or 2 per cent. carbolic-acid solution is better tolerated by the patient. The wash should be used at least every hour. In forty-five patients with nasal diphtheria this treatment was used, and twenty-four of them (53 per cent.) recovered, while of those who died (twenty-one), two-thirds had laryngeal membrane as a complication.

Thin flakes of membrane, which persist for a long time after the general disease has abated, are best treated by some mild local caustic. The double chlorid of gold and sodium, in 2 per cent. solution, has been of service to me in such cases.

Enlarged cervical lymphatics and enlarged tonsils, which occurred in about 10 per cent. of the observed cases, have yielded most readily and without suppuration, except in two instances, to inunctions of unguentum hydrargyri.

The sequelæ of diphtheria are quite varied. Transient peripheral paralyses are the most common, and may be named in order of frequency as follows: The palatal muscles; the ocular muscles; the peronei, and the tongue. Multiple palsies are rare.

One patient of mine, Case LXVII here reported, a child one year old, made a perfect recovery from the diphtheria, but died three months afterward with what was shown by the post-mortem examination to be a general myelitis. Dr. Eskridge observed this case and now has the specimen.

Since adopting the general methods of treatment which I have described, and especially since beginning the free use of mercurials, paralyses have been quite infrequent in my experience, and it seems probable that the treatment is to be credited with this result. One peculiar case of paralysis seems worthy of record here, as it at first seemed to be truly diphtheric, and illustrates, perhaps, a common error in diagnosis. An infant under observation by Dr. Sewall and myself had a severe attack of diphtheria, and immediately after recovery one leg was useless. Dr. Sewall diagnosticated diphtheric paralysis. I examined the babe, and, from a certain tenderness and fixation of the hip joint, diagnosticated accompanying incipient hip-joint disease. The hip symptoms soon disappeared, however, and I "revised" my diagnosis and agreed absolutely with Dr. Sewall. Treatment seemed unavailing, and after several months we placed the child under Dr. Eskridge's care. His diagnosis was peripheral cerebral hemorrhage. Under appropriate

treatment the cerebral clot was absorbed and the paralysis disappeared.

Diphtheric pneumonia sometimes occurs, and is usually fatal. The only cases that I have observed were two, both in children two years of age, and both of doubtful diagnosis. They were the first of the family to be taken sick. In neither case could I discover membrane, but both died within a short time. In each family there subsequently occurred several cases of undoubted diphtheria. My experience has thus not been in accord with the generally and undoubtedly accurately recorded cases in which the pneumonia has accompanied or followed the diphtheria.

The total number of cases of which I have preserved notes as to treatment is 117; all but about half a dozen of the mildest ones having been treated systemically upon the plan outlined in this paper.

Of the 117, but eighteen patients, or 15.3 per cent., died.

When it is taken into consideration that many of the cases were seen only after several days of neglect or of careless treatment, and that a comparatively large percentage of the cases were of the kind usually described as malignant, the death-rate is to be considered low. That the medicaments employed had something to do with the low death-rate I am convinced; and the frequency of their administration is an item not to be overlooked. Indeed, if there is one point to be insisted upon with unyielding urgency, it is this of large dosage at short intervals in cases of diphtheria. The directions given by some authors to spray the throat every three or four hours, or to give iron or whiskey three times a day, or perhaps every four or five hours, are admirable examples of "how not to do it." It is to be hoped that that kind of teaching and of practice will soon pass away.

In conclusion, I wish to say that there are many other diphtheria remedies which I have tried and found useless and hence have not mentioned. There are many others highly recommended as curative in all cases. These I have not tried, for their alleged unvarying success leads me to the conclusion that they have not been used in the treatment of genuine diphtheria.

It is probable that in a long series of cases, covering several years or several epidemics, no medication now known gives results much better than 85 per cent. of recoveries.

The Proportion of Tuberculous Meat, in nine German cities, varies from 10 to 26 per cent. In England the average is 12.22, that of the London supply being 15 per cent. Bulls and young cattle are almost free, the highest ratio being in cows, which in Midlothian reaches as high as 22 5 per cent.

ALBUMINURIA IN THE APPARENTLY HEALTHY.[1]

By W. H. WASHBURN, M.D.,
of Milwaukee, Wis.

The subject of albuminuria in the apparently healthy continues to be one of considerable importance and interest from more points of view than one. We want to know upon what if any, pathologic condition, of the kidneys or other organs of the body it depends; we want to know what the prognosis is likely to be in a given case; and above all, we are anxious to know if there is any method of management, hygienic or medicinal, which holds out any prospect of resulting in cure.

There has been going on now for some time a dispute as to whether the fluid part of the urine is a filtrate or a secretion. Great interest attaches to this question from the point of view we occupy, for, if the fluid is merely a filtrate, then we may reasonably assent to the opinion that albumin may under some circumstances appear in the urine in the absence of any structural change in the kidney. On the other hand, however, if the fluid is a secretion, we must assume that the secreting structures are endowed with the power of selecting certain elements from the blood and rejecting others; hence, according to this view of the case, the presence of albumin in the urine would invariably indicate structural change in the secreting organ.

A reference to the literature of this subject, since I read my first paper thereon three years ago (The Medical News, April 5, 1890), shows a gradual swing of the pendulum of opinion. For some years previously to that time the tendency had been to regard traces of albumin in the urine as of no particular significance, so far as they might indicate structural change in the kidneys themselves, or from a standpoint of prognosis. Many opinions were on record favoring the issuing of life-insurance policies to men presenting this symptom. At the beginning of this study, some fifteen or eighteen years ago, albuminuria was regarded as synonymous with nephritis, and the prognosis, therefore, necessarily unfavorable. Here was one extreme. When, however, it was found that many of these cases, instead of dying, continued to live, in many instances for years, without developing further unfavorable symptoms, the idea began to take root that albuminuria was not such a grave symptom after all. Gradually, with increasing data, it began to be urged that the presence of albumin in the urine of apparently healthy persons was quite an ordinary thing, and some went so far even as to urge that a small amount of albumin in the urine was a normal condition. But there seems to be a

[1] Read at the meeting of the Milwaukee Medical Society, January 24, 1893.

modifying of these opinions, which were both probably extreme, and we are now undoubtedly more nearly on the right track than ever.

A discharge of muco-pus from the lungs is never a normal occurrence; it may persist for a few days and pass away, and the patient exhibit no further pulmonary symptom, but if the discharge becomes chronic or permanent, then there is something serious the matter. So with albuminuria. I believe that its occurrence is, in every instance, an indication of an abnormal physical condition of the kidneys themselves. It may be transitory in many instances, as will appear in a number of cases I shall detail further along, and never recur, the kidneys suffering no permanent injury from the condition that produced the symptom; or, on the other hand, it may persist for a considerable time—twenty years or more—the probability of cure diminishing with the lapse of time, and the probability of further evidence of structural changes in the kidneys increasing.

We are told that the exciting causes of the form of albuminuria under discussion are: first, diet; second, cold and cold bathing; third, muscular exertion; and fourth, mental strain. I apprehend that all of these several causes act in very much the same way to produce this condition.

As to the dietetic causes: Many experimenters have studied the effects upon the urine of the ingestion of large quantities of egg-albumen. The results have been somewhat uncertain—in some individuals albumin appearing in the urine, and in others not. And the results are still more uncertain for the reason that many of the persons submitting to the experiment were not in apparently good health, in several instances the experimentee afterward dying of chronic nephritis, or a post-mortem examination after death, from other causes, revealing structural changes in the kidneys.

In the case of animals the results are more definite. Dogs have been the favorite animals upon which studies have been made, and the egg-albumen has been introduced by way of the stomach, rectum, and subcutaneous injection, albuminuria resulting from its introduction by all of these avenues. This, of itself, would not prove much, but when the dogs have been killed while suffering from the albuminuria, and the kidneys were examined, it has invariably transpired that a condition of glomerulo-nephritis was demonstrated.

Other articles of diet have been observed to give rise to albuminuria, as, for example, cheese, buckwheat cakes, etc., and it may readily be supposed that when these or other articles of diet are consumed in such quantities as to disturb the digestive process, they may give rise to albuminuria in the same manner as it was shown to result from the ingestion of egg-albumen; or individual idiosyncrasy may account for it.

I believe also that when albuminuria follows exposure to cold or cold bathing, the *modus operandi* is identically the same. I reported one case of this kind three years ago.

The other enumerated causes were muscular exertion and mental strain. Muscular exertion increases the amount of labor thrown on the kidneys in the elimination of the products of retrograde metamorphosis, and in certain individuals may give rise to a transient glomerulitis with accompanying albuminuria. In the case of mental strain the effect is produced in a less direct manner. The primary effect of mental strain, such as is undergone by students in the preparation for examinations, professional men in their multifarious duties, or of severe mental anxiety from any cause, is upon the digestive organs: the stomach and intestines. Digestion is interfered with; the action of the bowels becomes imperfect, so that costiveness or constipation, or both, result; and as a consequence of the resulting presence in the blood of toxic substances, a more or less marked glomerulo-nephritis, with accompanying albuminuria, may follow, which disappear as soon as the patient returns to his normal condition as to digestion. I detailed a case of this kind three years ago, and shall mention more particularly another case in this paper.

We are told that mucin may appear in the urine to such an extent as to respond to the tests for albumin, when there is no serum-albumin in the urine, and that, therefore, it is important for purposes of prognosis to distinguish between albuminuria and mucinuria. I am not in accord with this view, for it is a perfectly fair supposition that in every case of albuminuria there has been a time in its progress when there was an increased amount of mucin in the urine. The renal epithelium being called upon to exercise an unusual activity in the conversion of the albuminous blood-constituents, there would almost of necessity result an increase of the physiologic product, mucin, and hence mucinuria is not only a frequent concomitant, but is probably also a precursor of albuminuria. Therefore, mucinuria must always be regarded with suspicion, and so far as treatment or prognosis is concerned a differential diagnosis between the two is a matter of small practical importance.

I have now on hand, up to January 1, 1893, the records of 1070 urinalyses made in the course of life-insurance examining, and have encountered in this number 38 cases of albuminuria, being in the proportion of 3.55 per cent. These thirty-eight cases may be thus tabulated:

Two died of chronic nephritis; one four years, and one three years after examination.

Four suspected to have chronic nephritis at present, after intervals of from one to four years after examination.

One died of pulmonary tuberculosis fourteen months after examination.

Six were completely lost sight of.

Fourteen are known to be living and in apparent health, after intervals of from one to five years after examination, but the present condition of the urine is unknown, three of these cases being associated with cardiac lesions.

Two are known to be still albuminuric; one of about six months' and one of about four years' standing.

Six are known to have recovered.

Three are known to be still albuminuric, and now under my care, one for two years, one for eighteen months, and one for six months.

In addition to these thirty-eight cases I desire to include in this report two additional cases that came under my care, having been found to be albuminuric on examination for life-insurance, but not having been first examined by me. Including these two cases and the last two groups in the table given, I have eleven cases to detail.

Cases I, II, and III are the three cases reported three years ago, and which have remained well ever since, recent examinations showing the urine to be perfectly normal.

Case IV.—W. G. B., aged thirty-five, of good family and personal history and habits, invested all the savings of his life in a new and uncertain enterprise, which he managed personally. To provide for his family in the event of his untimely death and failure of his business project, he applied for life-insurance, when he was found to be albuminuric; his digestion was impaired; and he was suffering from intestinal flatulence, the microscope showing numerous crystals of calcium oxalate in the urinary sediment. This condition lasted for about six months, when, his business proving very unexpectedly successful, he recovered completely.

Case V.—L. J., a teamster, aged twenty-five, in whose case no particular cause was assigned, and only a few examinations were made, the albumin disappearing from the urine after one week without any treatment whatever.

Case VI.—H., aged thirty-one years, of good family and personal history and habits, had just successfully passed his examinations for a medical degree, and the albuminuria may have resulted from the mental strain incident to that interesting period in his life. The condition persisted for three months after I first discovered it, and then disappeared, and for the past five months his urine has been normal.

Case VII.—H. C. B., aged twenty-seven years, a principal of one of the city schools, had had no previous disease, except pneumonia at the age of twelve years. His parents are living and in good health. His grandparents all reached old age. Albumin was discovered in his urine April 25, 1891. This case seemed to me, at first, to be one of what Pavy has called cyclical albuminuria, for, on several examinations of the urine first passed in the morning, there was no trace of albumin, but later in the progress of the case it was found in the morning urine, as well as in that passed at other times in the day. Physical exercise has always appeared to increase the amount. No appreciable effect has followed the ingestion of food of any kind. Microscopic examinations have been made very many times, always with negative results. The quantity of urine voided daily was perfectly normal, and its specific gravity ranged from 1016 to 1027, but has generally been from 1020 to 1022; and the amount of urea excreted has been practically normal, ranging from 366 grains to 512 grains per day. There have been perhaps a dozen days during the past two years on which there has not been a trace of albumin in the urine, but with these exceptions albumin has been invariably present, though in small amount, which, as already stated, appeared to be slightly increased by a brisk walk. This gentleman suffered from habitual constipation, but otherwise was in a perfectly normal state of health. Correction of the constipation, however, did not appear to exert the slightest influence upon his albuminuria.

Case VIII.—Geo. W., aged seventeen years, is employed out of doors, and is of good family and personal history and habits, his physical appearance indicating robust health. He was examined October 25, 1891, and found to be albuminuric, the amount being comparatively large. This case has now been under observation fifteen months, and during that time quite a large number of examinations have been made. The first urine passed in the morning has never, at any of the examinations, contained albumin. The largest amount ever found was on one cold day in November, 1891, after a long ride on horseback. Microscopic examinations of the sediment have always been negative and the daily amount of urea excreted has been about normal. He has never complained of any subjective symptoms, except on irregular occasions, and then constipation and imperfect digestion were the complaints. On several occasions during the past autumn I have found the urine free from albumin.

Case IX.—J. A. G., aged thirty-six years, is a bookkeeper, of florid complexion and robust appearance, fond of athletic sports. His family and personal history and habits are good, except that there is a slight family predisposition to gout. In childhood he fell from a trapeze, injuring his back to such an extent as to produce osteitis and ankylosis of several of the lumbar vertebræ, but this condition of things has never been an inconvenience to him in any degree whatsoever, and he has always taken a good deal of exercise in gymnasia, and is an enthusiastic lover of foot-ball, which game he frequently engages in. Albumin was first found in his urine August 5, 1892, and since that time frequent examinations have been made. The total amount of urine passed daily has ranged from forty to sixty-six ounces. The specific gravity of the

daily amount has always been 1019 or 1020, and the daily amount of urea has ranged from 432 to 726 grains. The microscope has revealed hyaline tube-casts on several occasions; also numerous crystals of uric acid.

Case X.—W. G. N., aged thirty-two, is of good family and personal history and habits. He came under my observation first on May 5, 1889, having learned, upon applying for life-insurance two years before, that he was albuminuric. For a period of more than a year I watched this case closely, and it is still under observation, though examinations are now only made about once a month. The amount of albumin passed has never been very large. During the six months following the first examination, the first urine passed in the morning was very frequently tested and always found to be free from albumin, but on nearly every other occasion albumin was found in considerable quantity. Microscopic examinations always showed numerous crystals of uric acid, very often crystals of calcium oxalate, and occasionally epithelial cells. The specific gravity was always above 1020 and occasionally as high as 1027. Recent examinations have shown that the albumin still persists in the urine, but the microscope does not as yet show any casts. This, therefore, is a case of more than six years' standing and would appear to be a case of "cyclical albuminuria."

Case XI.—W., aged twenty-eight years, healthy in appearance and of good antecedents, found, on applying for life-insurance last August, that he was the subject of albuminuria. I had examined him for life-insurance on two previous occasions, when his urine was found to be normal, the last examination having been made about two years ago. This is the case of a medical man who is doing a very large and trying practice, who has but little open-air exercise, but who, nevertheless, supposed himself to be in perfect health until it was found that he was suffering from albuminuria. His digestion was and is fairly good; his bowels are rather inclined to be costive—in fact, this condition has been so decided that he has twice been the victim of a fissured anus. The morning urine is not always free from albumin, but has usually been normal, and on perhaps two or three occasions, since last September, the urine has been found to be normal during the day. The microscope has only revealed crystals of uric acid and calcium oxalate. From December 1st to December 10th, there was no albumin found in any specimen of urine examined, and during this time the bowels appeared to be in a more nearly normal state of activity than for some months.

The chief interest in these cases centers in Cases VII, VIII, IX, X, and XI. We may, perhaps, be able to diagnosticate Case X as one of cyclical albuminuria, but it seems to me as though the others must be classed as simple persistent albuminuria. In Case IX, in which we have a history of family predisposition to gout, with gouty manifestations in the patient himself, and excess of uric acid in the urine, we may be justified in the opinion that the man is in the early stage of arterio-capillary fibrosis, and the case must, therefore, be treated as one of incipient nephritis. Case VIII will probably recover; he is now but eighteen years of age, and there have been several occasions on which his urine was normal, it being a noticeable fact that it has been much more albuminous in the winter than in the summer months. Cases VII, VIII, IX, and X have all been treated with various drugs, and have, at times, been placed on diets that restricted the amount of nitrogenous foods, but all apparently to no purpose. They all for several months took strontium lactate in doses of thirty grains three times a day, without the slightest appreciable result. I was led from what I saw in the current medical literature, to expect that some good might result from the administration of the strontium salt, but my experience with it has been very disappointing, not only in these cases, but in several cases of chronic nephritis. General, tonic, and alkaline treatment has been as barren of good results. Saundby says that no cases of albuminuria afford a better opportunity for testing the influence of drugs than those of simple persistent albuminuria, such as are so often met with in the course of life-insurance examining; that although he has met with many such cases, he has never succeeded in curing one of them; that after a few months of unsuccessful treatment, they have usually been lost sight of. You will see by reference to my table that I cannot claim any better results than these; and among those cases in which the albumin has ultimately disappeared from the urine, it is more than doubtful if any drugs employed exercised any influence to that end.

So far as prognosis is concerned, we are no further advanced than we were when Professor Grainger Stewart's *Lectures on Albuminuria* were published in 1888. In these lectures Stewart teaches that in the form denominated *paroxysmal* there is a slight tendency to renal disease; that this result is less likely in those forms due to muscular exertion and to diet, while in the simple persistent form the outlook is less hopeful; though so long as the solids excreted are normal in amount and no vascular changes appear, there is hope. I think, however, that the opinion expressed by Lecorché and Talamon will be acquiesced in by those who have had opportunities to see much of this condition. Their opinion is as follows: "It is impossible to attach any prognostic value to the presence of albumin in the urine. Albuminuria indicates an alteration of the glomerular filtering membrane, transient or permanent; abundant or minimal, it indicates nothing else; it affords us no information as to the profundity and extent, and consequently none as to the gravity of the lesion. To form an opinion of this,

other elements of appreciation and other phenomena, general and local, must be considered conjointly with the albuminuria."

It is not my intention at the present time to enter into a discussion of the question of prognosis; I hope at some future time to make that the subject of a paper, but when we reflect that interstitial nephritis, with considerable proliferation of connective tissue, may continue for some time before tube-casts or renal epithelium appear in the urinary sediment, we shall see that the mere fact that the microscope fails to reveal these elements cannot be assumed to prove that no serious structural changes exist. In the tabulated statement already made, two cases appear which terminated in death from chronic nephritis, one in three years, and one in four years, after examination. In both these cases, repeated microscopic examinations made during several months failed to show any casts or cellular elements in the urinary sediment.

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EXPERIMENTS WITH COCAINE PHENATE AS A LOCAL ANESTHETIC.

By C. A. VEASEY, M.D.,

CONSULTING OPHTHALMIC SURGEON TO THE PHILADELPHIA LYING-IN CHARITY AND NURSE-TRAINING SCHOOL, ETC.

So much has been written of late concerning the deleterious systemic effects of cocaine hydrochlorate when used topically upon the mucous membrane or injected by means of the hypodermatic syringe, especially in patients who have organic lesions of the heart or kidneys, that we hesitate to employ it in many cases for fear there may be some idiosyncrasy and that the full physiologic action of the drug may be manifested.

Alarming symptoms often arise from its use, and one often wishes for a drug that would give us the local anesthesia without the probability of the systemic effect.

At the present time it is next to impossible to treat successfully diseases of the eye, nares, pharynx and larynx, or to perform operations upon these parts, without the aid of cocaine; therefore, the manufacturing chemist has been trying to produce some preparation that would possess the advantages without the disadvantages.

On account of the great similarity between the local effects of cocaine and those of phenol, both agents causing local anemia and anesthesia, and because it had been proposed to make extemporaneous mixtures of the two drugs to lessen the systemic effect of the former, it occured to Von Oefele [1] to combine the two substances in such a way as to form a salt perhaps, would have the anesthetic action of both, with the slow-absorbing power of the latter.

In cocaine phenate I believe we have this desired result. It is prepared by Merck, and his description [2] is as follows: "It is a slightly colored substance of *thick-honey consistency*, which readily melts when heated, and whose percentage of cocaine alkaloid is 75. It is readily soluble in a 50 per cent. solution of alcohol. The solution has a faint odor of carbolic acid."

It is extremely deliquescent, my attention having been directed to this quality by my friend Mr. Swartley, who prepared the various solutions for me; it is also soluble in albolene, one of the bland oils produced from the coal-tar group. The dose is from gr. $\frac{1}{12}$ to gr. $\frac{1}{6}$ by the stomach. Locally, "it coagulates the albumin in the tissue, preventing the absorption of the cocaine, thereby prolonging the anesthetic effect and lessening the danger of systemic poisoning." [3]

In this combination, therefore, we possess, theoretically, a drug which has local anesthetic properties with slow-absorbing power, and which should also be slightly antiseptic.

Determining to test for myself the properties of the drug as far as the effect upon mucous membranes was concerned, I had prepared alcoholic solutions and solutions in albolene.

My first experiment was upon my own eye.

The Eye.—On the lower lid of my left eye I placed one drop of the alcoholic solution of 4 per cent. strength, and, as anticipated, experienced a severe burning pain compelling me to close the lids immediately. Upon opening them there was found intense hyperemia of the conjunctiva, lachrymation, and slight photophobia.

[1] Merck's Bulletin, June, 1891, p. 77.

[2] Ibid., February, 1890, p. 10.

[3] Hare: Therapeutic Gazette, January, 1893, p. 19.

In two minutes another drop was placed on the same lower lid, and the symptoms were similar, though not so severe. In four minutes from the time the first drop was instilled there was anesthesia of the conjunctiva of the lower lid, of the lower half of the cornea, and of the corresponding ocular conjunctiva—these being the parts with which the substance had come in contact. The anesthesia lasted for six minutes, and then gradually disappeared. The pupil was very slightly dilated. There were muscular twitchings in the lower lid similar to those caused by an instillation of a solution of eserine, but not so severe or so prolonged in action.

On the lower lid of the other eye the experiment was repeated with a 4 per cent. solution of the drug in albolene. When the the first drop was instilled there was a slight stinging sensation which caused me to close the lids, but lasting for an instant only. The conjunctiva was found to be paler than before the instillation. There was no lachrymation, and no photophobia. In two minutes another drop was placed upon the conjunctiva, and the immediate effect was barely noticeable. In five minutes after the first instillation the conjunctiva of the lower lid and of the lower half of the eyeball was more anemic than before the experiment, and, in addition, the lower half of the cornea was anesthetized so thoroughly that pledgets of absorbent cotton and tissue paper could be rubbed against the parts without producing any sensation whatever. Sensation did not begin to return until ten minutes from the time its absence was first noticed, or fifteen minutes from the beginning of the use of the solution.

The pupil was widely dilated and gradually increased in size for about forty-five minutes, when it had reached the maximum. It was not reduced to the size of its fellow until the following day, though the experiment was conducted early in the morning. There was no paralysis of accommodation in either eye, but the "range" was changed, the near point being carried farther from the eye—in the eye upon which the last experiment was conducted it being about four inches in front of the original near point. My distant vision was slightly impaired, the letters appearing somewhat hazy, though I could still read 20/xx with very little difficulty.

The palpebral fissure was not appreciably enlarged in either eye, and there was no ptosis. The same character of twitching of the muscles of the lower lid was observed as in the other eye.

On the following day, I endeavored to ascertain whether, in the last experiment, it was the cocaine phenate or the albolene that produced the slight burning sensation when first introduced, and for this purpose placed a drop of albolene on the same part of the conjunctiva that, on the preceding day, had been touched by the solution of cocaine phenate in albolene. The result was entirely negative; there was no greater sensation than if a drop of distilled water had been used; thus proving to me that it was the cocaine phenate that caused the peculiar burning sensation when the solution in albolene was introduced, and that this solution had given me the true effect of the drug upon the eye.

THE MOUTH.—With a 4 per cent. solution I brushed the right half of my tongue from the tip as far back as I could well reach. In from two to three minutes the anesthetic action had begun; there was decided numbness of this side. In five minutes the application was repeated, the tongue being held out of the mouth as long as possible, to prevent the saliva from washing the solution away. In five minutes more—ten minutes from the beginning of the experiment—the right side of the tongue was so numb that an instrument drawn over it could not be felt. I then scratched my tongue on the right side with a pointed instrument, and, though the procedure was appreciated, it gave me no pain, as did the same procedure upon the opposite side. Next, I touched the right side of my tongue, at different times, with solutions of sugar and strychnine, but could not perceive the taste, though easily recognized on the left side. The numbness had disappeared and the taste returned in twenty minutes from the first application.

At another time I painted my lips and my gums, and the same anesthetic effect was produced, which reached the maximum in about ten minutes, and had entirely disappeared in twenty minutes.

THE NARES.—In the nares I sprayed some of a 4 per cent. solution in alcohol, and the anesthetic effect was more marked than on the mucous membrane of the mouth. At first there was a stinging sensation, similar to that produced in the conjunctiva, which I attributed, for the most part, to the alcohol in the solution, as spraying the other side of the nose with a solution in albolene, of the same percentage, did not cause more than a momentary burning sensation. The anesthetic effect of the latter solution came on a little later than that of the former, though, as far as could be judged, it reached the same degree of intensity. With the first solution the parts were benumbed almost from the first, the loss of sensation reaching a maximum in about eight minutes, and disappearing entirely in about fifteen minutes. By thoroughly spraying my nasal cavity with my head in such a position as to allow the solution to come in contact with the upper parts, where the terminal filaments of the olfactory nerve are situated, I was able to impair, but not to destroy, the sense of smell. This was destroyed at another time by the use of an 8 per cent. solution, and returned in eight minutes after it had disappeared.

The Larynx and Trachea.—In my own larynx and trachea I was unable to test the effect of the drug, but this was done upon two of my patients, the larynx of one being tuberculous, that of the other being perfectly healthy. In the former, the use of a spray of a 4 per cent. solution of cocaine hydrochlorate, in the larynx and trachea always caused giddiness, slight nausea, nervousness, and insomnia, which lasted during the day and night following the application. Upon spraying this patient's larynx with a 4 per cent. solution of cocaine phenate, I could not produce as great an anesthetic effect as with the hydrochlorate, so I increased the percentage, employing a 6 per cent. and then an 8 per cent. solution. The 6 per cent. solution of the phenate caused about the same effect as the 4 per cent. solution of the hydrochlorate, but the anesthesia, as far as I could judge, lasted a little longer from the use of the former drug. With the aid of this solution I was able to make applications to the tuberculous ulcers in about eight minutes after spraying the larynx.

In the larynx of the healthy patient, the anesthesia was produced in about the same time. In neither case was it possible to say when the effect had entirely disappeared.

While intra-laryngeal medication was facilitated by the use of cocaine phenate, spasm was not prevented, and in this respect the action is similar to that of the hydrochlorate.[1]

The Urethra.—Through the courtesy of one of my surgical friends, I made some observations in the case of a patient in which bougies were being employed for the gradual dilatation of a stricture of the urethra, the canal being so extremely sensitive that at times the bougies could be passed but a short distance beyond the meatus.

I introduced a dram of a 4 per cent. solution of cocaine phenate in albolene into the urethra, holding it there for five minutes, when a No. 30 steel bougie (French scale) was passed without any difficulty, the patient's statement being that he could "feel something," but that was all.

The Ear.—For the sake of making my experiments complete, I regret that I have not had an opportunity, since using the drug, to perform some operation on the ear under the anesthesia produced by it. Suffice it to say that no difference could be distinguished between its action and that of the hydrochlorate, when a drop was placed in the external auditory canal.

Reports of the successful use of cocaine phenate hypodermatically have been published by Vian[2] and by Kyle,[3] though Von Oefele states that he has not yet found a suitable solvent for this mode of administration, the alcoholic solution which he used causing severe pain. I have not had any opportunity to try the albolene solution in this manner, though I believe it will be less painful than the alcoholic.

The one quality in particular that has been claimed for cocaine phenate is that it produces the local anesthetic effect, without any systemic effect; so it is to be hoped that those members of the profession who have patients presenting an idiosyncrasy to the local use of the hydrochlorate will give the phenate a trial, and report the results.

My employment of the drug beyond experimental purposes has been confined to the treatment of diseases of the eye, ear, throat, and nose.

The following are the reports of some cases in which the drug was used:

Case I.—Male, aged forty-one years, of tuberculous family history; was referred to me by a medical friend for treatment of a constant hacking cough, there being no change in the pulmonary signs from the normal. Upon examination, laryngeal tuberculosis was found, accompanied by some ulceration. The man was immediately placed upon the customary treatment; but upon receiving the spray of cocaine hydrochlorate, of 4 per cent. strength, prior to the intra-laryngeal applications, he always became dizzy, nervous, irritable, and could not sleep well during the night which followed. This occurred after every application. When a solution of cocaine phenate, of 5 per cent. strength, was substituted, none of the symptoms noted was present, and the patient noticed the marked difference at once. The latter solution has been in use on this patient for some time, and there has not yet been noticed the slightest systemic effect.

Case II.—Male, aged thirty-eight years, with a tuberculous history, came for the treatment of harassing cough and irritable throat, which had existed ever since patient had had influenza, ten months before. Examination showed extensive ulceration of the right vocal band, tuberculous in character, and a beginning laryngeal tuberculosis. Using a solution of cocaine hydrochlorate of 5 per cent. strength, I anesthetized the band and surrounding parts as thoroughly as possible prior to using the curette, and while performing the operation, symptoms similar to those displayed in the preceding case, but much more severe, supervened. After this, whenever the throat was sprayed with cocaine hydrochlorate, slight nausea, vertigo, and insomnia followed. A 6 per cent. solution of the phenate was substituted, and there have been no unpleasant symptoms since, though I use it two or three times a week for making applications, and have thoroughly anesthetized the parts twice with it for the purpose of curetting the ulcer.

Case III.—A female, aged twenty-two years, of good history, presented herself for treatment of the throat, which she was constantly "clearing." I found large follicles in the pharynx, on which I used the galvano-cautery, having first sprayed the throat

[1] J. M. Da Costa, The Medical News, December 13, 1884.
[2] Nouveaux Remèdes, 1887, p. 192.
[3] Therapeutic Gazette, January, 1893, p. 18.

with a 4 per cent. solution of cocaine phenate. The result was fully as satisfactory as in the cases in which the hydrochlorate had been used.

CASE IV.—A male, aged twenty-six, had chronic hypertrophic rhinitis. I found a large inferior turbinated bone almost occluding the right nasal cavity which, without any difficulty, was removed by the aid of a 6 per cent. solution of cocaine phenate.

CASE V.—A male, aged forty-two, had had a foreign body in cornea for twenty-four hours. There had been unsuccessful attempts at removal. I instilled three drops of a 4 per cent. solution of cocaine phenate, and removed the particle with my spud, very easily and without pain. The drug also seemed beneficial in breaking up the conjunctivitis which was necessarily present.

CASE VI.—A female, aged twenty-eight, with an ulcer of the cornea of six weeks' duration. After using two drops of a solution of cocaine phenate of 5 per cent. strength, which was repeated in five minutes, I was able in ten minutes from the first instillation to cauterize the ulcer with the actual cautery without the patient suffering any pain.

CASE VII.—A male, aged ten, with convergent strabismus. I instilled a solution of cocaine phenate of 6 per cent. strength, and divided the internal rectus of the right eye with as little pain as is experienced when the hydrochlorate is used.

Though the cases cited are few in number, the drug has been used by me in many others with equally good results. From the foregoing experiments and cases it seems that the following conclusions are justifiable:

1. In cocaine phenate we have a drug that can be successfully used, without producing systemic effects, in those cases in which there exists an idiosyncrasy to the local use of cocaine hydrochlorate.

2. As good an anesthetic effect can be produced with cocaine phenate as with cocaine hydrochlorate, but stronger solutions are required to produce the same degree of anesthesia.

3. The anesthesia does not come on so quickly with the phenate as with the hydrochlorate, but lasts fully as long, if not longer, than the anesthesia from the latter.

4. In some cases, though there be no physiologic contra-indication to the use of the hydrochlorate, the phenate is to be preferred on account of its antiseptic properties.

125 NORTH SEVENTEENTH STREET.

The Use of Tuberculous Meat.—In Prussia the flesh of tuberculous animals is allowed to be sold if the animal was in good condition; if the tuberculous nodules are found exclusively in one organ; or if two or more diseased organs are in the same cavity of the body, or connected directly with one another by lymph-vessels or bloodvessels not belonging to the general circulation, but to the lungs or portal venous circulation.

THE IDENTITY OF THE PROPRIETARY, SO-CALLED "HYDRO-NAPHTHOL" AND IMPURE BETA-NAPHTHOL.

BY D. D. STEWART, M.D.,
OF PHILADELPHIA;
LECTURER ON CLINICAL MEDICINE IN JEFFERSON MEDICAL COLLEGE.

With a Special Report of an Analysis of Hydro-Naphthol.

BY CHAS. P. BECKWITH,
OF DETROIT.

MY attention was originally called to hydro-naphthol about 1886, by an extensive paper by Dr. G. R. Fowler, running through several issues of the *N. Y. Medical Journal* in the latter part of the preceding year. Of the chemistry of the phenols here receiving attention, hydro-naphthol, described as a new and promising antiseptic, a derivative of beta-naphthol, was assigned a definite chemical position. Dr. Fowler reported a series of bacteriologic experiments, undertaken at Johns Hopkins University, attesting the position of hydro-naphthol as an antiseptic and disinfectant.

At that time I had not used the naphthols internally, having imbibed the idea that they were poisonous. Naphthalin, after considerable trial, having disappointed me as a therapeutic agent in conditions in which an intestinal antiseptic was desired, I resorted to hydro naphthol, understanding that it was totally free from the toxic effects said to be possessed, to a high degree, by alpha-naphthol and beta-naphthol.

For several years I have used hydro-naphthol freely in gastro-intestinal ailments of supposed bacterial origin. Beta-naphthol, under its true name, I have prescribed little, and alpha naphthol not at all, the impression remaining that their use was unsafe. Early in last autumn it occurred to me, for reasons I have elsewhere detailed,[1] that hydro-naphthol might be of great utility as a prophylactic against cholera and of value as a remedy for the developed disease. Some experiments were then undertaken at my request, to determine its antiseptic and disinfectant value on the cholera-spirillum. These demonstrated that it possessed considerable power in this direction. This caused me to believe that we probably had in hydro-naphthol a remedy of extraordinary value for the purposes named.

On looking more closely into the chemical position of hydro-naphthol, I soon after learned, what, if I had originally known, I had forgotten, that hydro-naphthol was a proprietary preparation, and that the opinion was entertained in some quarters that it was simply impure beta-naphthol. At first I was unwilling to believe the latter, fancying that the statement rested on no adequate

[1] THE MEDICAL NEWS, September 17 and October 1, 1892.

evidence, not then being aware of Merck's investigation of the subject. The fact, however, of hydro-naphthol being a proprietary preparation, and the result which might ensue were it to be found as useful in cholera as I fancied, caused me to initiate a general investigation of the other naphthols.

Early I came across an account of Bouchard's thorough investigation of the physiologic effects of beta-naphthol, in which its entire innocuousness, as a remedy, was shown. This made me the more desirous of ascertaining its behavior toward the comma-spirillum, for I did not then feel certain of the aforesaid asserted identity. Besides which, alleged manipulations of beta-naphthol to obtain hydro-naphthol being secret, it might readily follow that the composition of the preparation had been recently changed.[1] I was, however, unable to obtain an investigation of the action of beta-naphthol on the comma-spirillum until very recently, when Dr. Sternberg kindly undertook it for me, making a thorough examination of the antiseptic and germicidal power of alpha-naphthol, beta-naphthol, and a salt of the latter, beta-naphthol benzoate.[2] Pending this investigation, I sought to discover the actual chemical relationship of the so-called hydro-naphthol to beta-naphthol. Inquiry of the proprietors of the preparation provoked the unsatisfactory but suggestive rejoinder that hydro-naphthol was not *sublimed* beta-naphthol. The more recent pamphlet on hydro-naphthol, which I had received, did not assist in clearing the difficulty. The proprietors describe their preparation as a hydroxid of beta-naphthol, a hypothetic compound which is not known to exist.

Some statements in this circular concerning the highly toxic qualities of beta-naphthol, and a statement of its asserted marked inferiority to hydro-naphthol as an antiseptic, caused me finally to disbelieve in hydro-naphthol. As reports in the journals of its use in medicine and surgery were not infrequent, others evidently being misled as I had been as to its identity, and as it was apparently obtaining a certain definite chemical position, I sought to have a careful examination made of it in a manner that would forever settle the question. Mr. Charles P. Beckwith, of Detroit, Michigan, very kindly undertook the matter for me, and has rendered the following most complete report, which will have the effect desired.

Report on the Composition of Hydro-naphthol.

This preparation is now put on the market in the form of a light-brown powder. The first sample obtained, that from a local drug-store, differed somewhat in appearance from the present preparation, being crystalline, and looking not unlike some samples of β-naphthol. Since then several different samples of hydro-naphthol have been received, directly and indirectly, both through druggists and from the manufacturers. These samples have all presented the uniform appearance of a light-brown powder. The first experiments seemed to indicate that hydro-naphthol is simply an impure β-naphthol. It could be readily sublimed, and the crystals so obtained were white, and gave all the reactions for β-naphthol. Several methods of purification were carried out, yielding a product in no way distinguishable from β-naphthol. When applied to the impure substance, reactions were obtained for β-naphthol, modified slightly, however, by impurities present.

Inquiry was made of the manufacturers, requesting such information as they could furnish as to identity of hydro-naphthol, its reactions, etc. In reply, it was stated that

> "If a known sample of 'hydro-naphthol' is tested alongside of a sample of ordinary β-naphthol, the perchloride of iron test produces a deep yellow-brown color with the former, but a bright-green color with the latter. It is a difficult matter to differentiate between the two, the ordinary reagents converting hydro-naphthol into β-naphthol. But if a solution of each is compared with a standard solution of permanganate of potash, it will be found that the oxidizing power of hydro-naphthol stands as 3 to 2 in comparison with β-naphthol."

These tests are, I believe, worthless. The only difference noticeable between β-naphthol and hydro-naphthol, when treated with solution of ferric chlorid, is this: the green color characteristic of β-naphthol is evident in both cases, modified, however, in the case of hydro-naphthol, by the natural brown color of the alcoholic solution of this compound, due to its impurities. The pure green color was obtained with the crystals purified by sublimation or otherwise. The statement is made in the foregoing letter that ordinary reagents decompose hydro naphthol, forming β-naphthol. In the pamphlet on hydro-naphthol by the manufacturers, it is claimed also that heat sufficient to sublime it causes the same result. I may say here that later a method of purification was found, to which I think the manufacturers cannot object. The pure compound so produced yielded this and every other test for β-naphthol perfectly. The greater reducing power of hydro-naphthol for potassium permanganate is likewise due to the tarry impurities present. This might have been predicted. With the purified preparation no such difference is noticeable.

Some tests were requested of the chemist of the manufacturers capable of differentiating hydro-

[1] A specimen I have had for several years is quite dissimilar in physical appearance from some obtained a few months ago.

[2] See my paper: "Treatment of Cholera by the Naphthols," American Journal of the Medical Sciences, April, 1893.

naphthol from beta-naphthol. In reply, it was stated that

"The crystals obtained on cooling hot saturated naphtha or gasolin solutions of hydro-naphthol and β-naphthol, respectively, have distinct characteristic forms, usually obvious under a low power. The β-naphthol crystals usually form simple rhombic plates, while hydro-naphthol forms compound lance-shaped crystals.

On investigating this test, I may say that I have not found it at all reliable, the crystals deposited from naphtha seeming to depend upon conditions of temperature, concentration, rate of cooling, etc. I had no difficulty in obtaining the lance-shaped forms from β-naphthol as well as from hydro-naphthol. This form is but a modification of combined rhombic plates.

The pamphlet of the manufacturers on hydro-naphthol was also sent me, in which the following comparative tests are given:

Hydro-naphthol.	*Beta-naphthol.*
Addition of one drop tincture of chlorid of iron (U.S.P. 1880) to its solution containing 2-3 grains of it in one fluid-dram produces a deep yellow-brown color, from which, after some time, dark-brown flocculi separate.	In solution of alcohol of the same strength becomes, with one drop of the same tincture of chlorid of iron, of a bright-green color, changing after some time into dull yellow, without separating anything.
Melting-point: 117°C. Soluble in cold dilute caustic soda, with a brown coloration. Solubility in water at 60° F., 1:1150. Dissolves in 10 parts alcohol, with dark-brown color.	*Melting-point:* 123°C. Insoluble in diluted cold caustic soda. Solubility in water at 60° F., 1:800. Dissolves in 10 parts alcohol; nearly colorless. *Physiological action* on the human organism strongly poisonous, producing albuminuria, even when the smallest doses are given by external application.
Physiological action on the human organism harmless and odorless.	

Of these, the iron test has already been shown to be worthless. Melting-points are always lowered by slight impurities. The product purified by the method described later melted at 122° C. I found Merck's "medicinal" β-naphthol to be soluble in 1 per cent. solution caustic soda—cold; also in ¼ per cent. solution. The very slight difference in solubility in water is readily accounted for by the presence of impurities. As to the comparative physiologic effects of hydro-naphthol and β-naphthol, I would refer to Bouchard's experiments with β-naphthol quoted in *Merck's Bulletin*, December, 1890, p. 148.[1]

It occurred to me that could hydro-naphthol be purified by some method to which the manufacturers could not reasonably object, a combustion might be made, and the carbon and hydrogen determined. This would settle the question. Experiments were tried in various ways. The substance was recrystallized repeatedly from naphtha, benzin, alcohol, ether, hot water, etc., without much success. Recrystallized four or five times from hot water, it still retained considerable color. After many experiments it was found that crystals almost perfectly white, and pure enough for analysis, might be obtained in small quantity by dissolving a large amount of hydro-naphthol in hot water, filtering very quickly, and again re-filtering quickly, so as to obtain the small amount of crystals first thrown out from the still quite hot solution. Occasionally a repetition of the process was required, but generally the crystals were very nearly white. Charcoal readily effects the decolorization—see their pamphlet, which was not, however, received until after the purification had been effected—but this was not used, lest the claim be made that it would decompose the hydro-naphthol. Inasmuch as the manufacturers recommend solution in hot water in using their product as an antiseptic, I do not think they can justly object to this method of purification. These crystals responded perfectly to every test for β-naphthol. A combustion was made of these crystals, every possible precaution being used to obtain correct results. They are as follows:

Calculated for $C_{10}H_8O$ [1]	Found.
Carbon, 83.33 per cent.	83.34 per cent.
Hydrogen, 5.55 "	5.58 "
Oxygen, 11.11 "	11.08 (by difference)

These figures seem to be quite conclusive. It does not follow that the manufacturers intend to mislead by their statements. In fact, I think it very likely that they put the β-naphthol through some such course of treatment as they claimed. I believe them to be mistaken, however, as to the effect of such treatment.

Finally, as a result of most thorough and painstaking investigation, I pass the opinion that "hydro-naphthol" is simply β-naphthol, together with certain tarry impurities, very possibly its own decomposition products.

Respectfully submitted,

CHARLES B. BECKWITH.

FEBRUARY 23, 1893.

[1] For a full account of Professor Bouchard's experiments, see *Pharmaceutische Rundschau*, February, 1888, pp. 40, 41. Professor Bouchard conclusively demonstrates that β-naphthol cannot be called poisonous in any dose that can be administered medicinally; that the toxic quantity for a person 65 kg. (143 lbs av.) is 250 grams (8¾ oz av.). This is most interesting in view of the fact that the manufacturers assert in their pamphlet that a "substitution [of β-naphthol] for hydro-naphthol will certainly result in failure and probably prove fatal to the patient." Comparative physiologic experiments were also carried out at the instance of Merck with ordinary hydro-naphthol, sublimed hydro-naphthol, and sublimed beta-naphthol, by Prof. Dr. Boström, director of the Pathological Institute at Giessen. These also conclusively showed that beta-naphthol was without toxic properties, but rather acted as a "good antiseptic, for all wounds healed rapidly without suppuration." See *Pharm. Rundsch.*, April, 1887, "Ueber das sogenannte Hydro-naphthol," by E. Merck.—D. D. STEWART.

[1] $C_{10}H_8O$ or $C_{10}H_7OH$ equals the formula of beta-naphthol, or its isomer, alpha-naphthol.—D. D. S.

Comment on the foregoing comprehensive report is unnecessary. It establishes beyond shadow of doubt the identity of the proprietary product, called "hydro-naphthol," with ordinary impure beta-naphthol. When I sought help in the matter, though I was aware that a chemist's investigations were asserted to have been made of hydro-naphthol by others, I was ignorant as to the thoroughness of these or to the conclusions reached. I was unable to find references to these until after I had received Mr. Beckwith's report. I have since found that the subject has been especially investigated by Professor Jacobson, of Berlin; Merck, of Darmstadt, and Gehe, and also by Hoffman, Endemann, and Mr. Genois, of this country, all of whom came to a similar conclusion as Mr. Beckwith, but none, so far as I know, has investigated the matter so thoroughly as he. Merck's investigation[1] is especially worthy of mention. It is as thorough as Mr. Beckwith's, with the exception that no combustion of hydro-naphthol was attempted.

CLINICAL MEMORANDA.

THERAPEUTIC NOTES.

By SOLOMON SOLIS-COHEN, M.D.,
PROFESSOR OF CLINICAL MEDICINE AND APPLIED THERAPEUTICS IN THE PHILADELPHIA POLYCLINIC; ONE OF THE PHYSICIANS TO THE PHILADELPHIA HOSPITAL, ETC.

I.

Benzo-naphthol. One of the best of recent drugs is that known as benzo-naphthol, an almost tasteless, slightly pungent powder, which, in the intestines, is split up into benzoic acid and naphthol. It is a most efficient antiseptic and astringent in enteric fever, as well as in less serious conditions associated with intestinal sepsis, and is especially useful in various forms of indigestion (acute and chronic catarrh of the alimentary tract) associated with flatulence and diarrhea. It would doubtless prove useful in some cases of cholera and cholerine. The dose is from 5 to 15 grains (0.3 to 1 gram), and so much as 75 grains (5 grams), it is said, may safely be given in twenty-four hours. It is apparently devoid of toxic effect, and possesses, besides its other powers, those of a mild diuretic.

Sparteine Sulphate. This drug is one of those concerning which different observers give opposite opinions. The disappointment not rarely experienced may, in some cases at least, be ascribed to insufficient dosage. In our experience sparteine usually acts best when given, at first, at intervals of about two hours, in doses of from a quarter to half a grain *per os*, or one-eighth of a grain hypodermatically. After from twelve to thirty-six hours of such dosage the intervals may be lengthened, and after three or four days one or two half-grain doses daily will often be sufficient. In a few instances, one-grain or two-grain doses, three or even four times a day, may act better than the smaller and more frequent doses, but we should always try the latter first.

Sparteine is, however, usually more efficient as a cardiac tonic when combined with caffeine, and its diuretic action may be powerfully aided by small doses (about $\frac{1}{16}$ of a grain) of pilocarpine; as also by draughts of hot lemonade containing spirit of nitrous ether.

Guaiacol Salts in Tuberculosis. Of drugs advocated for the treatment of pulmonary and other forms of tuberculosis, creasote is one of the best. Its only equal, indeed, is iodoform. Some patients, however, possess or acquire an intolerance (subjective or objective) to creasote, whatever method of administration be tried.

In such cases, guaiacol carbonate or guaiacol benzoate may be advantageously substituted. These are unirritating and almost tasteless. The dose of either salt is from 3 or 5 grains (0.2 to 0.35 gram) up to the point of tolerance. An effective dose is 5 grains, four times a day, best given in capsule or cachet after food. As guaiacol benzoate is split up in the small intestine into benzoic acid and guaiacol, it seems to have an especial advantage in the treatment of intestinal lesions, and is certainly quite useful in the management of diarrhea in tuberculous subjects.

Idiosyncrasy to Strychnine and to Picrotoxin. In a case of vasomotor ataxia, in a married woman of dark hair, eyes, and complexion, between forty and fifty years of age, strychnine was given in small doses (gr. $\frac{1}{60}$ t. i. d.), the patient not being aware of the fact. In a few days she returned, stating that she had been given strychnine, and that she knew it by its effect in producing, after four doses, the still visible swelling of the face and eyelids—the same symptoms having followed its administration some years previously. For purposes of observation, tincture of nux vomica was administered with the same result. Some weeks later, picrotoxin in doses of gr. $\frac{1}{60}$ t. i. d., was likewise followed by edema of the face and eyelids, after two days' dosage. No organic disease had been detected in the case. The urine did not contain albumin.

Idiosyncrasy to Cinchona. A young, fair, red-haired, blue-eyed, married woman, with influenza, was given 15 grains of cinchonidine salicylate in three doses of five grains each. On the following day, intolerable itching of the skin was followed in the course of an hour by the appearance of an eruption, partly erythematous, partly urticarious, occupying the face, arms, and trunk, in areas of apparently irregular distribution. The patient stated that the administration of quinine, in so small a dose as 5 grains, was always followed by such an eruption. The exanthem persisted for twenty-four hours. Sodium salicylate, given for control-observation, did not have the same effect.

Idiosyncrasy to Coniine Hydrobromate. A woman, sixty years old, for ten years affected with paralysis agitans, was given coniine hydrobromate as a substitute palliative for the hyoscyamine sulphate she had, for some

[1] "Ueber das sogenannte Hydro-naphthol," *Pharm. Rundsch.*, April, 1887, and "Noch Einmal Hydro-naphthol," Ibid., July, 1887.

time and with much benefit been taking in doses of $\frac{1}{200}$ grain t. i. d., but of which it had become necessary to reduce the dose below the effective point on account of ocular symptoms. It was intended to give $\frac{1}{100}$ grain coniine hydrobromate, and increase until the proper dosage should be ascertained. Owing to a misunderstanding as to the initial dose, and as to the cessation of the hyoscyamine, only $\frac{1}{400}$ grain of coniine hydrobromate was given, but the same quantity ($\frac{1}{400}$ grain) of hyoscyamine was likewise given. Ten minutes later the tremor had entirely ceased, and in twenty minutes the patient complained of inability to move the lower extremities, but without loss of sensation, and with gain of power in the upper extremities through diminution of rigidity. In about four hours the former condition of affairs—trembling, rigidity, and power of locomotion—had returned. The patient could not be induced to take coniine again, and, indeed, refused all medicine for fear of its surreptitious administration, so that a promise not to make any further experiment with it had to be given. The drug will doubtless be found useful in controlling symptoms in some cases of paralysis agitans, as it is in some cases of chorea.

ABSCESS OF THE LIVER, COMPLICATING CIRRHOSIS; MULTIPLE ASPIRATION; RECOVERY.

BY W. G. HOPE, M.D.,
OF ALBUQUERQUE, NEW MEXICO.

J. M., a German, by occupation a butcher, thirty-seven years old, a steady and rather immoderate consumer of beer and whiskey, applied for treatment, November 11th, after having been vomiting (no blood) more or less constantly for three days. The bowels were constipated; the tongue dry and covered with a heavy, yellowish coat; the temperature 100°; the pulse 127; the respiration 28. Several large blotches of petechiæ were present upon the chest and back. The area of hepatic percussion-dulness was considerably increased. The abdomen was full, tense, and hard, notwithstanding the protracted vomiting. There was no soreness or even tenderness over the liver, but there was some tenderness over the bowels and stomach. For the preceding four months the patient had suffered from attacks of constipation and diarrhea alternately, with occasional chilly sensations, followed by slight perspiration. He had been drinking more than usual on November 8th. I made a diagnosis of cirrhosis of liver, with alcoholic gastritis. By November 14th the vomiting was checked; the bowels had been moved vigorously; and the patient was taking and retaining a fair amount of liquid nourishment. The soreness had disappeared from the epigastric region; the general well-being of the patient was greatly improved; but about once in two days a slight, scarcely appreciable chill occurred, followed by slight fever and sweating. The pulse kept above 100, and the appetite remained poor. The patient was nervous and slept badly. There was no pain, and but little tenderness on percussion over the umbilicus.

On November 16th, twenty grains of quinine sulphate were given in the course of twenty-four hours, followed closely and regularly by smaller doses for eight days; at the same time the bowels were kept active. Although the stomach retained all medicine, and the bowels moved profusely (ash-colored stools), the slight chills and sweats continued, uninfluenced in the least degree by the quinine. The bowels were constipated, except when laxatives were given. The patient was getting slowly weaker, more nervous, more sleepless. Tonics failed to stimulate the appetite. When the quinine failed to break the intermittent fever, I thought, by a process of exclusion rather than from the symptoms, that we had to do with an abscess of the liver; but as there was no "pointing"; as the temperature never rose above 101°; as the rudest manipulation over the liver could elicit no pain or even tenderness; as the patient insisted on walking about the streets, and sometimes ate fairly well for three or four days at a time, I decided to keep him as quiet as possible, gave him iodin internally and externally, kept his bowels open, and awaited more marked symptoms. On about December 10th, Dr. Easterday, of this city, was called in consultation. He agreed that we had an hepatic abscess; that the abscess was small and deep-seated; that its contents were possibly being absorbed; and advised delay of operation until more pronounced symptoms appeared. By December 17th, the chills and sweats were more marked; the temperature was 104°; the pulse 130; the patient very restless; the bowels were still constipated. On December 19th, after consultation with, and with the assistance of, Drs. Easterday and Pearce, of this city, I aspirated (without an anesthetic).

A large five-inch needle was inserted two and one-half inches below and two inches to the right of the right nipple. Not till the needle had entered a distance of four inches did pus begin to flow; then about four ounces of characteristic "brick-colored" pus was removed.

For fifteen days after the operation the temperature was normal, though slight sweating occurred about every thirty hours; the appetite was good; the man slept well. Then the slight chills began to return; the sweats gradually became more profuse; the appetite was lost. By January 12th, the patient had declined in weight during his whole sickness from 165 to 112 pounds. During all this time there was absolutely no tenderness over the region of the liver; for only a few days was there diarrhea, but never dysentery. On January 13th, with the assistance of Drs. Pearce and Easterday, ether was administered and a bistoury was inserted at the most prominent part of the hepatic enlargement, in the axillary line, three inches toward the seat of the abscess (as ascertained at the former aspiration). No pus came. Then a large trocar was inserted along the track of the wound made by the bistoury, about three inches into the hepatic tissue. No pus flowed. Then a long aspirating-needle was inserted through the canula of the trocar still *in situ*. The needle was thus inserted a distance of five inches, when about two or three ounces of pus were evacuated.

The canula of the trocar and the needle were slowly withdrawn together, the aspirating-pump being operated at the same time; but no pus was obtained from any other part than the cavity already mentioned. The wound healed by first intention and gave no trouble, except for slight soreness on deep respiration, and that, only for three days. Recovery was rapid and uneventful. The cirrhosis manifested itself by considerable anasarca of the lower extremities, for three weeks after

the patient began to walk. The patient was discharged January 26th. The temperature never rose above the normal, nor was there chill or sweat after the second aspiration, although the pulse kept above 100 for a month. The man has now (March 2d) been doing his ordinary work as a butcher for a month; he weighs 160 pounds; his appetite is good; he says that he never felt better in his life.

The points of especial interest are:

1. The absolute absence of pain over the hepatic region, throughout the whole course of the case.

2. The presence of tenderness over the umbilicus—a symptom referred to by Da Costa.

3. Constipation, continuous and stubborn, until four days before the second aspiration.

"Practically, an intermittent fever which resists quinine is not malarial." (Osler, *Practice of Medicine*, 1892.)

INSANITY IN TWINS.

By FRANK PARSONS NORBURY, M.D.,
ASSISTANT PHYSICIAN, ILLINOIS CENTRAL HOSPITAL FOR THE INSANE, JACKSONVILLE, ILL.

A. M. and I. M., twin brothers, aged thirty-two years, natives of Prussia, not married, were admitted to the Illinois Central Hospital for the Insane, September 5, 188—. The cause of the insanity, in each case, according to the verdict of the jury, was "self-abuse and loss of money." Heredity was the real underlying cause, as their mother was insane. Masturbation seemed to us to have no etiologic importance in either case. The cases presented symptoms almost identical. A. M. had been insane two weeks before admission to the hospital, his attack beginning suddenly with maniacal excitement; he became very noisy and violent at times. The delusions, manifested then and since, were of a religious character, more or less systematized. He believed his brother was the Messiah, and had descended from heaven; that the Messiah (his brother) had ordered that he be worshipped in sackcloth and ashes, and that, as a religious rite, A. M. should drink salt-water. When admitted to the hospital he was agitated, sleepless, emaciated, and would not take nourishment readily. After the agitation had subsided, he ceased to be violent, but the delusions were as persistent as ever, and became more systematized. He talked less, and after a time he settled into a state of indifference and carelessness, which, after two years, is practically unchanged. He has twice escaped from the hospital, both times going to his home, where he caused consternation by his insane actions. At present he is in good physical health, his mental symptoms being those of degenerative paranoia.

I. M. did not become disturbed until a week after his brother's insanity had developed, when suddenly he, too, became noisy and went about proclaiming that he *was* the Messiah, and the day of judgment was at hand. His agitation rapidly developed into violent maniacal excitement, necessitating restraint. When admitted to the hospital he was considerably exhausted, from prolonged excitement, loss of sleep, etc. After a few days he became again very much agitated, and continued so, at intervals, for a period of three months. His agitation was more violent than that of his brother, but was similar in character. He ultimately became calm—in fact, for a time, was depressed, but later a more regular mental state was established; he became brighter than his brother, but never displayed much sane intelligence. His delusions became systematized and marked his case as one of degenerative paranoia. His physical health improved and he was finally removed, by the county authorities, from the hospital to the County Institution, from which he soon after eloped and then emigrated to a neighboring State.

The brothers resembled each other closely: I. M. was heavier and stronger than A. M., but their mental caliber, habits, and customs, as well as occupations, were similar. I. M. was a tinker, A. M. a peddler; they travelled together, lived a hermit-like existence together, and were very devoted to each other. They were Jews, and in their religious observances were always together. These cases support what Ball[1] has said regarding insanity in twins, viz., "that they show the closest physical and moral resemblance; features, intellectual and moral disposition coincide." Their mental aberration is developed simultaneously and the attacks are similar in character. In these cases both are pronounced paranoiacs. Further, the dominating influence of heredity is shown in these cases in the highest manifestations of its force. For these twins are brothers with a closer tie than that of other children in the same family, "because they were born at the same time, conceived under identical circumstances, they experienced the same influences during the whole period of gestation, and as in some, if not in all, cases there has resulted a striking resemblance of cerebral organization and of physical health." Such can be the only possible origin of these pathologic symptoms which, breaking out at the same moment, follow an absolutely identical course, characterized by the same phases and same observations.

NEW DEVICES.

AN IMPROVED VAPOR-APPARATUS.

By WILLIAM SCHEPPEGRELL, A.M., M.D.,
ASSISTANT SURGEON TO THE EYE, EAR, NOSE, AND THROAT HOSPITAL OF NEW ORLEANS.

In the treatment of diseases of the Eustachian tube and middle ear it is frequently expedient to resort to the use of vapors of various kinds. A convenient apparatus for this purpose is shown in Fig. 1, which was made for me by Messrs. I. L. Lyons & Co., of this city.

The reservoir consists of a heavy German glass pint bottle having two necks, somewhat similar to a Wolff's bottle. Two glass tubes, bent at right angles, are passed through rubber stoppers, as shown in the cut, the tubes extending for a distance of half an inch into the necks of the bottle. A piece of rubber tubing is attached to one of the bent tubes, the free end of the rubber tubing being attached to a hard-rubber point, which fits into the end of a Eustachian catheter. A double bulb is attached to the other glass tube by means of a piece of rubber tubing, two feet in length.

For use, the reservoir is partly filled with tincture of iodin, compound tincture of benzoin, or other medica-

[1] B. Ball: Insanity in Twins. Tuke's Dictionary of Psychological Medicine.

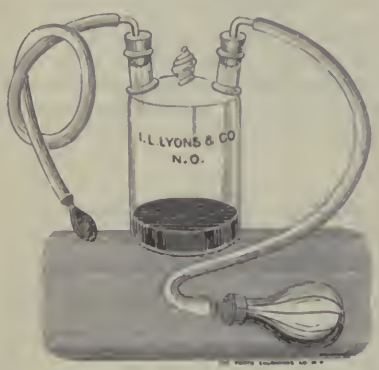
ment. When the bulb is used, the air passes through the reservoir, carrying the vapor through the hard rubber point into the Eustachian catheter.

FIG. 1.

Fig. 2 represents the vapor apparatus so modified that it can be used by the patient at home. Instead of the double bulb, there is attached a Politzer air-bag; and, instead of the point to fit into the Eustachian catheter, there is an ordinary hard-rubber nose-piece.

When using the apparatus the patient should fit the nose-piece firmly into one nostril, and close the other nostril. He should then say "hick," and keep the tongue

FIG. 2.



firmly pressed against the palate, while the air-bag is compressed. If properly done, the patient will hear the characteristic sound in the ear.

Instead of saying "hick," the patient may take a mouthful of water, which is swallowed just as the air-bag is compressed.

In children, who cannot be taught either of the above methods, the inflation may be carried on with equal success while the child cries.

CITIZENS' BANK BUILDING.

AN IMPROVED ANTISEPTIC WIRE-SUTURE TWISTER.

BY EDWIN K. BALLARD, M.D.,
ASSISTANT SURGEON TO HOSPITAL FOR WOMEN OF MARYLAND, BALTIMORE.

THE accompanying cut shows a wire-suture twister which has advantages over the one now used for gynecologic and other work when such an instrument is needed.

In the old-style twister closure of the jaws is effected indirectly by pushing forward with the thumb a sliding rod, the lower end of which clasps a slot upon the under jaw of the instrument, which affords leverage to pull the jaws together, as well as a support to hold them closed upon the end of the wire. In using this instrument it sometimes happens that, unless considerable force is applied, the catch fails to grasp the slot; and at times, after being held, the suture

becomes jammed in the grasp, due to friction of the slide.

To overcome these defects, as well as to furnish an instrument capable of thorough and easy cleaning, I have devised the one represented. It is seven and a half inches long, and consists of two shanks and a spring, all detachable from each other. Its beak is shaped as in the usual twister, though smaller, and with a spherical depression on the inner surface of each jaw. The joint is formed by a straight pin on one shank fitting into a round hole in the other, with projecting shoulders on the female blade, under which the male blade is securely caught. The blades are unlocked by turning at right angles and dislodging the axle-pin. An ordinary catch-forceps lock fastens the separating spring to one handle.

An ingenious feature is the fastening catch, which our instrument-maker uses on needle-holders of a certain pattern, and from which this was suggested. After passing over the last notch the catch is unhooked at once by slipping into an open space in the ratchet, instead of requiring a lateral push to free it, as is the case with most ratchet-catch handles. This device enables the twister to be closed and opened by a continuation of the same movement—simple pressure of the hand; at the same time it does not allow the handles to separate in the act of rotation, as they need only to be very lightly grasped when used.

MEDICAL PROGRESS.

Cesarean Hysterectomy in a Malacosteon.—SPOHN has reported (*Daniel's Med. Journ.*, viii, 8, p. 300) the case of a short, stout woman, forty-two years old, who had borne nine children. The last two labors, respectively four years and six years previously, had been difficult and instrumental, and the woman was informed that she could not again give birth to a child. The woman was a malacosteon. The peculiar position that she was compelled to assume in her work as a "tortillera" (kneeling with the body bent forward) had caused an anterior curvature of the vertebral column in the lower dorsal and lumbar regions, the most prominent point of the curve being two and a half inches from and a little above the pubic arch. The woman, however, again conceived and went into labor at term. When seen, after three days, the membranes had ruptured, and it was decided to open the abdomen and remove the uterus and its appendages. An incision was made into the abdomen sufficiently large to permit slight protrusion of

the fundus of the uterus, which was seized with strong vulsella forceps, and held, while an incision was made directly into it. Two fingers of each hand were then introduced into the uterus, and the opening enlarged by tearing. Before the uterus was delivered the child had been expelled by contractions. A rubber tube that had been thrown around the uterus was tightened as the organ passed through the abdominal opening, and a long piece of aseptic gauze was wound around the uterus to prevent the escape of any of its contents into the abdominal cavity. Though the uterine incision had passed through the center of the placenta there was but little hemorrhage. The child was well developed and lived. The pedicle was transfixed above the elastic ligature by four long knitting-needles; the uterus was removed; and the free surface was seared with the actual cautery. The abdominal cavity was irrigated with sterilized water; no drainage-tube was employed; the abdominal incision was closed with silk, the sutures near the pedicle passing through it just below the constricting tube of rubber. The pedicle came away on the tenth day, leaving an opening between the vagina and the abdominal incision which gradually closed by granulation. The woman was quite well in the course of thirty days. The child was nourished artificially. Mother and child were well a year after the operation.

Pulmonary Gangrene from the Presence of a Tooth in a Bronchus.—Munro (*Glasgow Medical Journal*, xxxix, 2, p. 112) has reported the case of a boy, ten years old, who was operated on for necrosis of the femur resulting from a fall. After the operation, although the wound progressed favorably, the temperature continued high, with marked fluctuations; the breathing became accelerated and shallow; at first dry and then moist râles were heard; the percussion-note on the left side of the chest became dull; emaciation set in; and the breath became strikingly offensive. Fifteen days after the operation the child died. At the post-mortem examination the left lung was found riddled with small gangrenous cavities containing foul-smelling fluid of brownish-green color. In the left bronchus, at a point where the tube entered the pulmonary structure, a temporary molar tooth belonging to the upper jaw, and containing a carious cavity, was found. The mucous membrane of the bronchus was congested from a short distance from the bifurcation of the trachea downward. The spleen contained several caseous-looking masses, probably of tuberculous origin, and small portions of which were calcified. In explanation of the accident it is noted that in cleansing the mouth in the course of the operation two loose teeth were detached and removed. It is thought that a third escaped notice and was inspired.

Intrinsic Nerves of the Kidney.—Berkeley (*Bulletin of the Johns Hopkins Hospital*, vol. iv, No. 28, p. 1), as the result of a histologic study, comes to the conclusion that the renal nerves enter the kidney with the vessels at the hilum, and that, with their multifarious ramifications and ganglionic enlargements, they form a not inconsiderable portion of the entire substance of the organ. From the vascular nerves, which may be called primary nerves, pass secondary divisions that are distributed throughout the cortical and medullary-cortical regions in the form of a vast open network. The glomeruli are surrounded by a wide-meshed plexus of fibers, having terminal end-knobs approximated closely to the capsule of Bowman. Fibers pass off singly and separately from the vascular nerves, and are distributed to the convoluted tubes, not only as end-terminations in the form of the well-known globular ending, but also as fine, delicate threads that penetrate the membrana propria of the tube, and presumably enter the cement-substance between the epithelial cells; the function of these divisions to the tubuli contorti is probably one concerning the urinary secretion. Ganglionic enlargements occur widely, but, strictly speaking, no nerve-cells, provided with nucleus, body, and protoplasmic arms, are to be found. All of the renal nerves belong to the sympathetic system.

Premature Labor, with Symphysiotomy.—Budin (*Bull. et Mém. de la Soc. Obstét. et Gynécol. de Paris*, No. 3, 1893, p. 21) has reported the case of a rachitic woman, thirty years old, with a deformed pelvis, who was pregnant for the third time. The first pregnancy had terminated at maturity; the fetus had been dead for a week and was macerated. The second pregnancy was terminated prematurely; a living child was delivered, but it died in the first week. The distance between the promontory of the sacrum and the inferior surface of the pubic junction was 3.65 inches. In view of the previous history, it was decided to induce labor before the normal termination of the third pregnancy and to perform symphysiotomy. The delivery was a difficult one; it became necessary to apply the forceps to the after-coming head; nevertheless, a living child was born. The woman convalesced satisfactorily. When she walked, on the twenty-first day, there was no greater mobility at the pubic joint than is common in multiparæ at a corresponding period. The child, however, did not thrive. As the mother had no milk, the infant received sterilized milk. Syphilis was suspected and mercurial inunctions were employed, but despite all care the child died on the thirteenth day. On examination after death no lesion was found; so that the diagnosis of syphilis seemed to be confirmed.

The Early Eye-symptoms of Posterior Spinal Sclerosis.—From a consideration of the possibility of the early diagnosis of posterior spinal sclerosis from the eye-symptoms, Hansell (*Journal of the American Medical Association*, 1893, xx, 7, p. 167) concludes that transient external ocular paralysis—for example, ptosis or esotropia—in the absence of a recognized cause, may be an indication of incipient posterior sclerosis. The existence of spinal myosis, unilateral or bilateral, the pupillary response to light being wanting, but the reaction with convergence being present, would warrant a strong suspicion of incipient sclerosis. So-called "idiopathic" atrophy of the optic nerve, non-inflammatory and of unequal degree, often precedes by months or years the appearance of the spinal symptoms of posterior sclerosis. The coexistence in a person between thirty and sixty years of age, with hereditary neurotic tendencies, of paresis of one or more extrinsic ocular muscles, spinal myosis and Argyll-Robertson pupil, and incipient atrophy of the optic nerve, in the majority of cases is followed

by the appearance of distinctive symptoms of posterior spinal sclerosis.

Hernia of the Bladder.—AUE (*Deutsche Zeitschr. f. Chirurgie*, B. xxxv, H. 3, 4, p. 351), from a study of fifty-nine cases of hernia of the bladder of which he could find record, and an additional case under his immediate observation, arrives at the conclusion that the condition, though not frequent, is not as uncommon as is usually stated. Most commonly a portion of the bladder finds its way into the groin; less frequently into the perineum, the sciatic foramen, the crural canal, and the linea alba. The hernia may be simple, or it may be complicated by the presence of bowel; either may have prolapsed before the other. A sac is wanting if the prolapse involves a portion of the bladder uncovered by peritoneum; while hernia of a portion covered by peritoneum may be attended with the formation of a sac. If both bladder and bowel are involved in the hernia, the former is always situated behind the latter, which is usually adherent to the surrounding structures. Hernia of the bladder is not a malformation, but an acquired defect. Its occurrence is usually attended with characteristic symptoms, which are, however, occasionally absent. The only rational treatment is a radical operation; palliative treatment is permissible only in exceptional instances.

THERAPEUTIC NOTES.

The Relative Utility of the Various Preparations of Iron in the Treatment of Anemia and Chlorosis.—SMART (*Lancet*, Nos. 3625, 3626), as the result of a clinical study, found, in the treatment of anemia and chlorosis, that of the various forms of iron employed the best results were obtained with the sulphate in doses of seven grains three times daily; in cases associated with atonic dyspepsia it is of advantage to prescribe from fifteen to twenty-five minims of dilute hydrochloric acid shortly before meals; if there be hyperacidity, ten grains each of sodium bicarbonate and potassium carbonate are to be preferred. Next in efficiency was saccharated iron carbonate in doses of from twenty to thirty grains twice daily. Third came ferrous chlorid in the form of syrup, in doses of a dram (seven and a half grains) three times daily. Iron phosphate was fourth, and ferrous oxid was fifth. Arsenic alone did not appear to exert any appreciable effect upon the regeneration of the red blood-corpuscles and hemoglobin in the cases of symptomatic anemia in which it was employed; combined with iron, especially the sulphate, arsenic was capable of positive results. In pernicious anemia, on the other hand, arsenic exerted a distinctly noticeable effect in promoting recovery alike of red blood-corpuscles and hemoglobin.

The Treatment of Delirium Tremens.—LANCEREAUX (*Bulletin Médical*, No. 15; *Münchener medicinische Wochenschr.*, xl, 9, p. 187) maintains that the first indication in the treatment of a case of delirium tremens is to control the excitement, which is dependent upon the toxic action of the alcohol upon the nervous system and is responsible for the sleeplessness, and sometimes for a fatal issue. The patient is to be isolated and, preferably, placed in a dark room, so as to be removed from all sources of irritation. Of drugs, bromin is uncertain in action, and opium and morphine are efficient only in large doses; chloral hydrate, on the other hand, is certain and prompt in action. From sixty to ninety grains are at once given, together with a little morphine. If sleep do not set in in the course of ten minutes an injection of a sixth or a third of a grain of morphine is given. If necessary the dose of chloral may be repeated after the lapse of three hours. Subsequently the interval may be prolonged. When the acute manifestations have subsided, strychnine or nux vomica is to be administered. Sodium bicarbonate may be required for the gastric condition and hydro-therapeutic measures for the general condition.

The Effect upon Sucklings of Purgatives Administered to the Mother.—GOW (*Practitioner*, vol. l, No. 3, p. 168) has made observations upon forty-two nursing women, suffering with constipation, to determine if the administration of purgatives was attended with any effects upon the children. Four drugs were employed: aloes, senna, cascara sagrada, and magnesium sulphate. It was found that while the administration of magnesium sulphate to the mother was frequently followed by looseness of the bowels of the suckling child, senna, cascara sagrada, and aloes rarely brought about such a result.

Pyoktanin for Ptyalism.—HEIMANN (*La Semaine Médicale*, 1893, No. 14) has reported the case of a woman, fifty-six years old, who for two years had suffered from intense and offensive ptyalism, of unknown origin, associated with swelling and redness of the structures of the buccal cavity. Astringent gargles had proved futile; the internal administration of potassium iodid afforded but temporary amelioration; but the employment of a 1 per cent. solution of blue pyoktanin, by means of a spray, twice daily, for a period of three weeks, was followed by permanent relief.

For the Night-sweats of Pulmonary Tuberculosis.—(*Ewart*).

℞.—Quininæ sulphat. }
Zinci sulphat. } . . ää gr. j.
Ext. hyoscyami }
Ext. nucis vomicæ . . . gr. ½.—M.

Ft. pil. no. j. S.—Take at bedtime.

La Semaine Médicale, xiii, 12.

In a Case of Paroxysmal Hemoglobinuria reported by KÖSTER (*La Semaine Méd.*, 1893, No. 14), in which there was a history of syphilitic infection of four years' standing, and which failed to yield to treatment with ergotin and quinine, a cessation of the attacks followed the subcutaneous administration of mercury thymolo-acetate after the sixth injection.

Emulsion of Cod-liver Oil.—

℞.—Ol. morrhuæ . . . . ♏xxx.
Glycerini . . . . ♏x.
Liquor calcis vel
Mucilag. acaciæ . . . ʒj.—M.

The Practitioner.

The Medical News.

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SATURDAY, APRIL 1, 1893.

CHLORALOSE.

Chloralose is the name given to a substance resulting from the action of anhydrous chloral upon glucose. This drug, which is the latest addition to the already long list of hypnotics, possesses so many interesting and novel properties, as shown by its investigators, Hanriot and Richet, that we think it well to bring it before the notice of our readers.

The desirability of conservatism with regard to new drugs is sufficiently evidenced every year by the mushroom-life of hundreds of new and vaunted specifics; nevertheless, the carefully conducted experiments of scientific investigators must always be valuable, and call for careful consideration.

The experiments with chloralose have been conducted in the chemical and physiologic laboratories of the Faculty of Medicine of Paris, and were reported only a few weeks ago before the Société de Biologie.[1] The substance occurs in crystals and is soluble in boiling water, although most of it crystallizes out again on cooling, only five grams per liter being soluble in the cold. In aqueous solution the drug is extremely bitter, but by mixing the powder with milk, or enclosing it in cachets, it can be taken without inconvenience.

[1] Comptes rendus hebdom. de la Soc. de Biol., Paris, 1893, Nos. 2, 4, and 5.

The results from injection into animals are full of interest. A dog which has received a dose of 0.5 gram per kilo of body-weight, after half an hour begins to hesitate in walking, as though his legs were slightly stiffened; later, he lies down, seems sleepy, and the eyelids tend to close. Gradually the decubitus is complete; the animal seems to have an irresistible desire to sleep, and is apparently unable to hold himself up longer. But the sleep is quite different from that of a chloralized dog, for there is no diminution in the reflexes, and a slight touch may cause active movements. If left alone, the dog sleeps calmly for from five to eight hours. The arterial pressure is not lowered, and there is no fall of temperature. On awaking, the dog soon feels perfectly well again, and eats and runs about as usual. A larger dose kills the animal, death resulting from cessation of respiration.

Cats are much more susceptible to the action of the drug than are dogs, and in them one-tenth of the proportionate dose suffices to produce the same symptoms.

A most interesting feature brought out by Hanriot and Richet's investigations is the strange power which chloralose possesses of dissociating sensibility. A dog which has been brought quickly under the influence of the drug by intra-venous injection, loses all sensibility to pain, but retains intact or exaggerated the sensibility to *succussion*. Thus, bloody operations may be performed on skin, bones, and muscles without any apparent attention; but if one shake the table or the floor, the dog will leap violently into the air.

With a smaller dose, say 0.25 gram per kilo, the animal in one or two hours begins to act strangely. Instead of lying down and sleeping, he will wander, head down, about the laboratory, running against chairs and tables, and paying no attention to calls. He seems to have "psychic blindness," and acts like an animal deprived of its gray cortex in the Rolandic regions. The dog is a somnambulist, and walks about oblivious of external excitation.

Hanriot and Richet have proved that under the influence of chloralosé the gray cortex loses in great part its electric excitability (though not so completely as in an animal poisoned with chloral), while the excitability of the subjacent white matter is retained.

The drug has been used clinically by Landouzy, Marie, Moutard-Martin, Segard, and others, with good results. They find it a faithful hypnotic

in ordinary insomnia, sleep coming on in from a half-hour to an hour after the administration of 0.20 gram of the drug. Should the patient awake too soon, another dose of the same size may be given immediately. The drug is said to leave no unpleasant after effects, and does not irritate the stomach or intestines. It does not appear to be so effective as morphine in the insomnia of alcoholism. HANRIOT and RICHET regard it as *un poison psychique par excellence*. Like all other drugs of its class, it must be used with care, as individual idiosyncrasies regarding it have already been met with. Particularly with hysterical and neurasthenic women should the early doses be small, perhaps 0.05 or 0.10 gram for insomnia.

From what we have said, chloralose is evidently worthy of further study. The finding of a drug which, it is claimed, affects only the psychic cerebral element, and which is limited in its action to a comparatively small area of the gray cortex, leaving absolutely intact the cardiac, vascular, gastric, and medullary functions, indicates a decided advance in our knowledge of the "poisons of intelligence."

LIFE-INSURANCE AND THE RESPONSIBILITY OF THE MEDICAL EXAMINER.

WHILE the vast increase in the business of life-insurance has resulted in a closer attention to the qualifications of the medical examiner and the securing of a higher grade of physician for that purpose, it must some time longer happen that many secure these positions who have not the requisite qualifications. This is partially owing to the fact that the supply of thoroughly trained physicians does not yet equal the demand in this particular department, and partly to the fact that the appointments are largely made through personal interest of officers of a company in some individual physician—very often the family physician, sometimes a relative. Why should not these positions, in the large cities at least, be dispensed on the basis of an examination of a practical character? The difficulties have greatly increased since the examination of urine has come to be a part of every examination of a candidate for life insurance. Indeed, it seems almost necessary that candidates for this department of civil service should receive special instruction bearing upon their work. Within the last few days a man called upon us who had been rejected by a life-insurance examiner of no small experience because he had sugar in his urine, and this opinion was based on an examination of two samples. Yet the candidate at the time of his visit to us had not a trace of sugar in his urine, and some examination led to the belief that the reaction met by the examiner was due to uric acid, which often misleads.

It is an interesting fact realized by many who have had large experience, that at the present day, while albumin is more frequently declared, by the hasty examiner, to be absent when it is present, glucose, on the other hand, is declared present when it is absent. This is partly due to the uric acid reduction, and because some men still regard *decolorization* of the cupric solution as reduction and precipitation.

The day will come, too, when what is known as functional or intermittent albuminuria should not be a cause of rejection. In fact, the time is now. But as long as the average medical examiner is what he is, it will, perhaps, be prudent to continue the present practice. Yet, as decisions go to-day, since these throw out all cases of albuminuria, on the one hand many an injustice is done, while on the other many a good risk is lost.

EDITORIAL COMMENTS.

More Years of Study, or More Study in the Year?—In view of the fact of the sharp and continuous lessening of the percentage of college-bred men entering upon medical studies, the cultured editor of the *American Lancet* suggests that the terms of undergraduate medical study be continued almost or quite throughout the entire year. Thus the alumnus would come to practise at about twenty-five years of age. The lengthened term of study in literary and scientific institutions must certainly become an established fact. It is felt that the long vacations are, in great part, useless gaps of leisure, and that they do not harmonize with the press and rush of the world that is round about, or that that is to come. As to medical study, the five or six months semester, and the six or seven months of vacation are already nearly the wonder of the past. To lengthen the term to nine, ten, or even to eleven months, would not be without good consequences. It would, perhaps, stop vacation-loafing, weed out the unriper students, bring to medical study those better fitted, financially and educationally, increase the number of professional teachers, limit the power of the commercial professor as well as that of his college, and thus centralize and dignify the science and the art of medical teaching.

The Death under Ether of Col. Shepard, of New York, on March 24th is, according to the statements of Drs. McBurney and McLane, a puzzling fact. These gentlemen are beyond question most skilful and excellent

surgeons, and seem to have taken every precaution demanded by science. "Between February 24th and March 24th, several examinations of the urine were made, but no evidence of any organic disease of the kidneys was found. His heart and lungs proved to be healthy," etc. Respiratory failure began before anesthesia was complete and before the intended operation (for stone in the bladder) had been commenced. The alarming symptoms increasing, tracheotomy was performed, with the thought that some vomited material might be lodged in the windpipe. Under the administration of oxygen, artificial respiration, and the usual means of relief, the patient revived somewhat. Despite all efforts death occurred at 4.10 o'clock P.M., the administration of ether having begun at 12.45 P.M. Drs. McLane and McBurney state that in their opinion "death was due to sudden edema of the lungs, following the administration of ether, but primarily due to some cause unknown to us."

Stating the Cause of Death.—Mr. Lawson Tait, in a letter to the husband of a deceased wife, stated that the cause of the woman's death was the injury done by the electric needles applied by another practitioner. Mr. Tait, as is well known, is squarely opposed to the treatment of myomata by electrolysis. The practitioner, Dr. Denholm, brought Mr. Tait to legal trial, but the Medical Defence Union defended Mr. Tait so ably that during the trial a compromise was proposed by the plaintiff, and was accepted, whereby each side paid its own costs. An indirect consequence of the trial and subsequent discussion will probably be a division of the Medical Defence Union into two branches, one of the metropolis and one provincial. Much graceless jealousy and professional ill-will came to light, it being very evident that our English brethren are decidedly human. But that they have a Defence Union at all is an illustration of an *esprit de corps* superior to our own.

The Low English Death rate.—About 1873 began throughout England a thorough-going zeal in sanitary science. From this date to 1889 the death-rate was reduced from 21.2 to 17.9 per 1000 of the population. This means that in England and Wales, in 1889, there were about 400,000 persons living that would not have been living if the death-rate of 1873 had been allowed to persist. What an expressive argument is this as to the value of preventive medicine! But in London, with all its crowding, filth, and poverty, the figures are more startling. The death-rate has there fallen in this period from 22.5 to 17.4. What a reproach to us that in our smaller American cities, with exceptional advantages in wealth, drainage, water-supply, etc., but with utter disregard of the a, b, c of sanitary science, we keep up a death-rate of from 22 to 25 per thousand. How little do we value life, the most valuable possession in the world!

The Berlin Sewage-Farms.—It is an interesting fact that in the five years' history of the Berlin Sewage Farms carefully kept statistics show that the administration of these farms has no deleterious effects upon the health. In no case was it possible to trace any case of death to the sewage-farming. The death-rate has, indeed, been exceptionally low, in 1889 being only 4.81 per thousand. Only one death was due to typhoid fever during the entire period. The animals kept on the farms have also been remarkably healthy. There is no unpleasant odor on or about the farms. So pure is the effluent from the farms that it may be permitted to flow into any stream. In fact, experiments have fully proved that this effluent is so pure that fish-breeding is perfectly successful in the water.

Bovine Scarlatina?—Within a few days during last August the health-officers of Glasgow traced some sixty or seventy cases of scarlet-fever to the infected milk of one dairy. The day before the first case was reported, it was learned, a member of the dairyman's family was taken ill with the disease. Further inquiry showed a peculiar eruption on the teats of the cows. Three or four reddish-brown crusts with black centers were found present on each teat of all the cows of the herd. Another herd two miles distant, was similarly affected two weeks later. The possible parallelism with vaccinia and smallpox is interesting and suggestive.

Cure-alls in the Daily Papers.—A correspondent is justly indignant that a paper of the character and reputation of *The New York Times* should practically give the lie to the virtue and morality of its editorial pages by publishing column advertisements of the infallible cures for every imaginable disease by the use of a nostrum designated Humphrey's specifics. Our correspondent asks what can be done about it. Frankly, nothing, so long as almost equally quackish "ads" are appearing every week and month in (so-called) medical journals.

"The G. T. R. Doctor."—With its customary and altogether praiseworthy clearness and bravery, *The American Lancet* shows up the pernicious influence and emptiness of result of the "Get-there-regardless doctors," warning the younger members of the profession against the shortness and valuelessness of their "success." Every community has an example or two of these scheming, self-seeking, dashy fellows, who purchase power and fame "at prices enormously above their true worth," paying therefor the respect of self and of their ungullible fellows.

Rhizodontrophy.—This formidable word has been introduced to denote a new operation for the treatment of alveolar abscess complicated by necrosis of the root of the tooth. The gum is incised, the alveolus drilled through with the dental engine, and the apex of the diseased root of the tooth is removed with a burr. It is difficult to understand the etymologic principles on which the word is constructed, but that is a small matter when a word must be found.

The Disposal of Typhoid and Cholera Excreta.—The Medical Officer of Health of Blackburn, England, Dr. Barwise, advises the use of a special pail with an hermetically closing lid, containing several pounds of calcium chlorid, in which the infected material is placed. The pail is each day removed, the contents destroyed by heat, and the disinfected pail returned. The plan has given satisfaction at the Bolton Fever Hospital.

Division of Spoils.—*The Medical Record* says that the physician and the hotel-keeper are sometimes guilty of

disreputable methods—the former in one instance, for example, charging the guests seven dollars a visit and giving the innkeeper two as his share of the plunder. There seems to be no end of this sort of thing. But in order to punish such graceless professional members as these it is necessary to "first catch your hare."

Dispensary Abuse.—The Presbyterian Eye, Ear, and Throat Charity Hospital of Baltimore has a non-professional gentleman employed to interview patients whom he suspects to be able to pay. If his suspicions are confirmed, he informs them that they must get advice outside of the dispensary. "Many hundreds were thus turned away during 1892." Is there another hospital that does this?

A Typewriter for the Blind has been invented which prints embossed characters and is adapted to any type. This is a praiseworthy means of giving these unfortunate defectives interest and employment. The *Lancet* suggests telegraphy and telephony as further possible outlets for the energies of the blind. May not the phonograph be turned to a similar use?

The New York Physicians' Mutual Aid Association has a membership of eleven hundred and forty-three, and the amount now paid on each death is one thousand dollars. The assessments in 1892 were fourteen, of one dollar each, a remarkably low rate of life-insurance. Such associations should be formed in all States.

Dearth of Cholera News.—There is a remarkable absence of reports of the recrudescence and extension of cholera throughout the world that so far is in marked contrast to what has been feared and phophesied. Is it the calm before the storm?

SELECTIONS.

THE ESTEEM OF ONE'S FELLOWS.

WHO of us is not in need of friendly encouragement in the changing events of life? True happiness is not based on the appreciation of others, but on the consciousness of one's own honest labor. How otherwise should we hold our ground in the midst of the turmoil of the day? How should we preserve the hope of progress and of final victory against the attacks of opponents and the insults which are spared to no one who comes before the public? He who during a long and busy life is exposed to public opinion certainly learns to bear unjust criticism with equanimity, but this comes only through the confidence that our cause is the best, and that some day it must triumph. Such is our hope in our wrestlings for progress in science and art; such is our hope in our struggles for civil and religious liberty, and in this hope we gradually become hardened against malicious attacks. It is a kind of immunization which, I acknowledge, has also great drawbacks, for this hardening toward unjust attacks leads very easily to a similar indifference toward just attacks, and, owing to the tendency to contradiction rooted in the nature of human thought, it finally leads also to indifference to praise and recognition. One withdraws again and again into oneself, discontented with the world and with oneself also; but who can so completely retire within himself that the consciousness of the insufficiency of human thought, and that the criticisms of opponents are justified, cannot break through the crust of even the most hardened self-consciousness? Happy is he who has courage enough to keep up or regain his connections with other men, and to take part in the common work. Thrice happy he who does not lack in this work the flattering commendation of esteemed colleagues.—VIRCHOW: Croonian Lecture, in *British Medical Journal.*

PATHOLOGY AND BIOLOGY.

THE way in which pathology has tried to approach the desired goal, to fathom the living substance in its diseased conditions, has led us a great step forward. Pathologic anatomy, especially, has opened this road. The more numerous its observations, and the more it penetrated into the details of the lesions, the smaller became the field of so-called general diseases. The first steps of medieval anatomists had the effect of drawing the attention to local diseases. In the first and longest period, which one may define as that of regionism, the pathologic anatomists sought the cause of disease in one of the larger regions or cavities of the body—in the head, chest, or abdomen. In the second period, ushered in by the immortal work of Morgagni, shortly before the time of which I last spoke—the time of Brown and Hunter—they endeavored to find in a certain region the actual organ which might be considered as the seat of disease. On this foundation arose the Parisian school of organicism, which, until late in this century, held a dominant position in pathology. In this school, already, they recognized that not the organ, nor even a portion of it, could be the ultimate object of research. Xavier Bichat divided the organs into tissues, and showed that in the same organ sometimes one and sometimes another tissue might be the seat of disease.

From that time forward the eye of the pathologic anatomist was directed chiefly to the changes in the tissues, but it soon became apparent that even the tissues are not simple substances. Since the third decade of this century the microscope has disclosed the existence of cells, first in plants and very soon afterward in animals. Only living beings contain cells, and vegetable and animal cells show so much similarity of structure that one can demonstrate in them the actual product of organization. This conviction has become general, since through our embryologists, especially through Schwann, proof has been afforded that the construction of embryonic tissues was derived from cells also in the highest animals and in man himself.

In the fourth decade of this century the science of pathologic anatomy had already begun to be directed toward cells. These researches very soon struck on great difficulties. Many tissues, even in their developed state, appeared to contain neither cells nor their equivalents; nevertheless, I have been able to demonstrate their existence in those tissues in which their presence appeared to be most doubtful—namely, in bone and connective tissues. At the present time we are so far advanced as to be able to say that every living tissue contains cellular elements. We go a step further even,

for we require that that tissue alone should be called living in which the constant occurrence of cells can be shown.

A still greater difficulty then appeared, namely, to discover in what way new cells originated. The answer to this question had been very heavily prejudiced by the so-called cell-theory of Schwann. Inasmuch as this very trustworthy investigator asserted that new cells originated from unformed matter, from "cytoblastema," there was opened up a wide road to the old doctrine of the "generatio æquivoca," which afforded all partisans of plastic materials an easy way of reviving their dogma. The discovery of cells of connective and allied tissues gave me the first possibility of finding a cellular matrix for many new growths. One observation followed another, and I was soon in a position to give utterance to the dictum, "Omnis cellula e cellulâ."

And so at last the great gap was closed which Harvey's ovistic theory had left in the history of new growth, or, to speak more generally, in the history of animal organization. The begetting of a new cell from a previous cell supplements the reproduction of one individual from another—of the child from the mother. The law of the continuity of animal development is therefore identical with the law of heredity, and this I now was able to apply to the whole field of pathologic new-formation. I blocked forever the last loophole of the opponents, the doctrine of the specific cells of pathology, by showing that even diseased life produced no cells for which types and ancestors were not forthcoming in normal life.

These are the fundamental principles of cellular pathology. In proportion as they have become more certain, and lastly of more general value, they have also secured for themselves great importance in physiology. The cell is not only the seat and vehicle of disease, but also the seat and carrier of individual life; in it resides the "vita propria." It possesses the property of irritability, and the changes in its substance, provided these do not destroy life, produce local disease.

Disease presupposes life; should the cell die, its disease also comes to an end. Certainly, as a consequence, the neighboring and even far distant cells may become diseased, but, as regards the cell itself, the susceptibility to disease is extinguished with life.

Since the cellular constitution of plants and animals has been proved, and since cells have become recognized as the essentially living elements, the new science of biology has sprung up. It has not brought us the solution of the ultimate riddle of life, but it has provided concrete material, anatomic objects for investigation, the properties, the actions, and the passions of which we can analyze. It has put an end to the wild confusion of fantastic and arbitrary notions such as I have just mentioned; it has placed in a strong light the immeasurable importance of anatomy, even in the most delicate conditions of the body, and lastly, it has made us aware of the close similarity of life in the highest and lowest organisms, and has thus afforded us invaluable means for comparative investigation.

Pathology has also its place, and one certainly not without honor, in this science of biology; for to pathology we are indebted for the knowledge that the opposition between healthy and diseased life is not to be sought in a fundamental difference of the two lives, not in an alteration of the essence, but only in an alteration of the conditions.

Pathology has been released from the anomalous and isolated position which it had occupied for thousands of years. By applying its revelations not only to diseases of man, but also to those of animals, even the smallest and lowest, and to those of plants, it in the best manner helps to strengthen biologic knowledge, and to narrow still more that region of the unknown which still surrounds the intimate structure of living matter. It is no longer merely applied physiology; it has become physiology itself.

Nothing has more contributed thereto than the constant scientific union which has endured for more than three hundred years between English and German investigators, and to which we to day add yet another link. May this union never be broken!—Virchow, Croonian Lecture, in the *British Medical Journal*, March 18, 1893.

CONCERNING CHOLERA.

The arrival of a steamship from Hamburg at the Spanish port of Malaga with a case of Asiatic cholera on board will not be overlooked by sanitary authorities on either side of the Atlantic. It indicates that at the very beginning of spring the condition of Hamburg is such that all possible precautions should be taken at American ports to prevent the introduction of cholera from that city. A brief review of the condition of Europe with respect to cholera during the past winter is suggested by this news.

It is well known that the water-supply of Hamburg has not been improved. Water is still taken from the Elbe at a point about two miles above the city, and is not even filtered. During the winter cases of cholera have been reported in Hamburg from time to time. Probably there were many more that were not reported. Sailors in the harbor have taken the disease by drinking water from the river, and in other ways it has been shown that the stream still carries the germs of this malady. We believe it is commonly expected in Europe that, with the return of warm weather, there will be another epidemic of cholera in Hamburg. The conditions are certainly favorable, so far as the water-supply is concerned. It is unfortunate that the Imperial Board of Health has not had power to compel a sanitary purification of this supply.

There has been a local epidemic in an asylum near Halle, in Germany, and the agent of infection in this instance also was the water-supply, which was taken from the River Saale. Careful investigation revealed the presence of the germs of cholera in the water of that stream, even after it had passed through filtering beds. It seems probable that several streams in Northwestern Germany may still be in a condition that tends to make them sources of infection.

There has been no recurrence of cholera in Paris, but in Marseilles there was a local epidemic, which was quickly suppressed. Within a short time two or three cases have been reported in Italy, but they appear to have been sporadic. A considerable number of cases were reported in the northern and central cities of Rus-

sia during the winter; but in these instances the disease was easily controlled or was stamped out by the severity of the season.

In Southern Russia, however, and especially in the region adjoining Galicia, there has been a marked and threatening revival of the plague which caused such great mortality there last summer. The condition of the inhabitants is very deplorable, and they are an easy prey to infectious diseases of all kinds. The failure of their crops and the loss of their cattle, following the terrible ravages of cholera, have left them in a state of almost helpless destitution. The return of spring finds them prostrated by influenza, cholera, and fevers.

The people of Western Europe and America should guard against infection from Hamburg and Southern Russia. A majority of the emigrants from Russia take ship from Hamburg, but some of them sail from Mediterranean ports. The number of immigrants arriving in this country from Russia, including Poland, in the months of January and February, was 1292. The monthly average in the year 1892 was about 6100. Since the beginning of March, however, there has been a revival of immigration.

While precautions should be taken to prevent the introduction of cholera at our ports—and especially at this port—the thorough cleaning of our cities and the protection and purification of their water-supplies are safeguards of the greatest importance. We may not be able to bar out the disease, although we should strive earnestly to do so, but cholera can do comparatively little harm in a community of intelligent people where sanitary laws are enforced and the water-supply is not exposed to pollution. Now is the time to clean the streets of New York and to insure the purity of the Croton water.—*N. Y. Times.*

REGULATION OF MEDICAL PRACTICE IN OHIO.

THE great State of Ohio has at last awakened to the necessity for some regulation of the practice of medicine; her legislators feel that ignorant men and women should not be allowed to practise upon unsuspecting victims; they have therefore passed a law requiring an examination before allowing doctors to practise—*upon horses*. Of course, horses are much more valuable than are men and women; therefore, they readily saw the necessity of protecting horses against quacks. This law was passed by the same branch of the Legislature which refused to give a decent hearing to a bill to regulate the practice of medicine among human beings. We are in hopes that, after they regulate the practice among dogs, cats, and bedbugs, the lower animals (men and women) may receive some protection against ignorance and rapacity. If we only have patience the wise (?) members of the Legislature will finally see that animals as low in the scale as men, women, and children have some rights.—*The Cincinnati Lancet-Clinic.*

Dr. William J. Gibson, a young physician of much promise, who had developed a large general practice in the southern part of Philadelphia, died at Asheville, N. C., on February 9, 1893. Dr. Gibson graduated from Princeton College in 1880; from the College of Physicians and Surgeons of New York in 1883.

CORRESPONDENCE.

PRACTICAL HELPS IN THE USE OF THE METRIC SYSTEM.

To the Editor of THE MEDICAL NEWS,

SIR: In working with the metric and apothecaries' systems of measures, I have noticed some figures that make the relation between the two very simple.

Starting with the relation that 15 grains equal 1 gram, we have:

15 grains = 1 gram.
15 grams = ½ ounce.

Then with fractions and unity we have:

1 grain = 0.0666 grams.
½ " = 0.0333 "
⅓ " = 0.0222 "
¼ " = 0.0111 "
⅛ " = 0.0083 "

Here we have a set of reciprocal relations which, taken in pairs, are:

1 grain = 0.0666 gram. ¼ grain = 0.0111 gram.
½ " = 0.0333 " ⅓ " = 0.0222 "
⅛ grain = 0.008 gram.

For memorizing: 1 = 6, ¼ = 1; ½ = 3, ⅛ = 2; the decimal point being kept in mind, ⅛ = 0.008. Knowing these, 10 grains will, of course, equal 0.66 gram; 5 grains will equal 10 × ½ grain or 0.33 gram. 3 grains is slightly under 10 × ⅓ grain = 0.22 gram. 2 grains is slightly over 10 × ⅛ grain = 0.11 gram.

The same way, moving the decimal point in the other direction, 1/100, 1/200, 1/600, 1/1000, can be estimated. Having these obtained so easily, the mind can very quickly substitute for numbers or fractions that come between.

Liquids by the apothecaries' system are dispensed by measure, so that when we wish to dispense by weight, as in the metric system, we must increase the figures in proportion as the substances are heavier, because they occupy less room than the same amount of water, on the volume of which substance the relations are based. The following figures are from Mann's *Prescription-Writing:* Glycerin and syrups are about one-fourth heavier, chloroform one-half heavier, ether one-fifth lighter. All the others are near enough the same:

50 grams = 10 teaspoonful doses.
200 " = 10 tablespoonful doses.

From these figures ♏j of chloroform would be (0.066 gram + ½) = 0.099 gram.

Putting the whole thing in a nutshell, we have:

15 grains = 1 gram.
15 grams = ½ ounce.
4 " = 1 dram.
1 grain = 0.066 gram.
⅙ " = 0.011 "
½ " = 0.033 "
⅓ " = 0.022 "
⅛ " = 0.008 "

Glycerin and syrups one-fourth heavier, chloroform one-half heavier, ether one-fifth lighter.

50 grams = 10 teaspoonful doses. 200 grams = 10 tablespoonful doses.

Very respectfully,

CLARENCE O. AREY.

CHESTNUT HILL, PHILADELPHIA.

WOOD-SORREL FOR CARCINOMA.

To the Editor of The Medical News,

Sir: Having read the letter of Dr. Reeve in The Medical News of February 11, 1893, p. 167, on wood-sorrel, I write a few lines to say that I find a note on the margin of the notice of *oxalis acetosella*, in my volume of *Resources of the Southern Fields and Forests*, as follows: "Eltinge reports cases of epithelioma of the lips cured by application of the inspissated juice (*Phila. Medical Times*, xii, 159). *Rumex acetosa* used for similar purposes." 1889. I thought the reference might interest you. Yours most truly,

F. Peyre Porcher.

Charleston, S. C.

WOOD-SORREL AS A CANCER-CURE.

To the Editor of The Medical News,

Sir: In The Medical News of January 28th there appears a letter from George Walker, M.D., of Yorkville, S. C., in which he speaks of an "old woman" remedy for carcinoma, in the form of extract of wood-sorrel. He explains its therapeutic action by the chemical changes that take place in its preparation, the evaporation of the juice of the plant by exposing it to the sun's rays for one week in a *pewter plate*, thus forming oxalates of lead and tin, by the union of the free oxalic acid and acid potassium oxalate contained in the juice with the lead and tin of the pewter. These salts, he infers, supply the caustic properties to the extract.

The Doctor's chemistry is doubtless correct, and, while I can offer no satisfactory explanation of what the peculiar caustic properties possessed by the extract are, I am obliged to differ with him as to the oxalates of lead and tin being the essential therapeutic agents of the extract to render it caustic, etc. My reasons are as follows: In my boyhood days I had considerable experience in the preparation of this extract, and know that it possesses the same caustic properties, whether prepared by evaporation in earthen or in pewter dishes.

Twenty-five years ago my father, then a country practitioner in this county, obtained the knowledge of the peculiar caustic properties possessed by the extract of wood-sorrel from an old gentleman living a few miles from my home, who prepared and applied it in the treatment of some form of neoplasm about one of his eyes—probably epithelioma of the lid. I remember very distinctly seeing the man in my father's office, and hearing my father relate how the extract of wood-sorrel had cured the old gentleman's cancer—but the eye was lost, whether from the effects of the caustic or from the carcinoma I cannot say, and in my youthful indifference I did not deem it of sufficient importance to inquire.

But the preparation of the extract was of far greater moment to me, as my father afterward employed it quite extensively in the treatment of epitheliomas, and supplied it to several other practitioners, as there grew to be quite a demand for the drug in our vicinity. As my father would readily pay one dollar per ounce for it, my brother and myself spent many not unpleasant days in the woods gathering the sorrel, beating it to a pulp, and expressing the juice, which we afterward exposed to the sun in earthen plates (never in pewter), and were thus able to place on the market a fine article of the solid extract that at once netted us one dollar per ounce and depleted the paternal treasury accordingly.

I think these early pharmaceutical efforts must have produced a more lasting effect on my brother's mind than upon mine, for when he graduated at the University of New York, a number of years later, he chose as the subject of his thesis "Epithelioma," in which the use of wood-sorrel extract as a curative agent in these cases was treated exhaustively.

S. Mitchell, M.D.

Hornellsville, N. Y.

NEWS ITEMS.

The Johns Hopkins Medical School will be opened for the instruction of properly qualified students, October 2, 1893. Men and women will be admitted on the same terms. The school will be a department of and under the direction of the Johns Hopkins University, and will derive great advantages from its close affiliation with the Johns Hopkins Hospital. In addition to the resources of these two foundations, the Johns Hopkins Medical School has an endowment of its own.

The school now established is planned for the professional education of those students who have been especially fitted to receive its instructions by a course of preliminary training in the liberal arts, and especially in those branches of science, like physics, chemistry, and biology, which underlie the medical sciences. An ability to read French and German and so much Latin as is requisite for his professional use must be shown by every candidate.

Course of Instruction: The course of instruction will continue through four years. Anatomy, including normal histology and embryology, physiology, and physiologic chemistry will be the principal studies of the first year. The study of anatomy will be continued in the second year, and in addition pharmacology, general pathology and pathologic anatomy, bacteriology, and the general principles of medicine and surgery will be taken up. During the last two years clinical instruction will be given in medicine, surgery, obstetrics, and gynecology, and the various special branches of practical medicine and surgery, such as ophthalmology, dermatology, laryngology, neurology, pediatrics. Instruction in hygiene, psychiatry, legal medicine, and medical history will be provided during the course.

A full statement of the courses of instruction and of hospital and laboratory facilities will be issued hereafter.

Practical work in the dissecting-room, the laboratory, and at the bedside, demonstrations, clinics, and recitations will form the most prominent features of the methods of instruction. Conferences or seminary methods will also be employed.

The charge for tuition will be two hundred dollars per annum. There will be no extra charges for instruction in any department, or for laboratory courses except for material consumed.

For the present, no student will be admitted to advanced standing.

Hearers, not candidates for a degree, will be received at the discretion of the Faculty.

As candidates for the degree of Doctor of Medicine the school will receive:

1. Those who have satisfactorily completed the chemical-biologic course which leads to the A.B. degree in this University.

2. Graduates of approved colleges or scientific schools who can furnish evidence: *a*, That they have a good reading knowledge of French and German; *b*, That they have such knowledge of physics, chemistry, and biology as is imparted by the regular minor course given in these subjects in this University.[1]

3. Those who give evidence by examination that they possess the general education implied by a degree in arts or in science from an approved college or scientific school, and the knowledge of French, German, physics, chemistry, and biology already indicated.

Ophthalmic Section, American Medical Association.—The time for the annual meeting of the American Medical Association (June 6th to 9th, at Milwaukee, Wis.) is so near at hand that all members who wish to contribute papers must send the titles of their papers to the secretary before April 25th, in order to have them appear in the general program, and in order to make arrangements for discussion. It is also urgently requested that brief abstracts be furnished not later than May 15th in the form in which authors wish them to appear in the preliminary report of the meeting. The announced communications, as well as the names of those who have promised to attend, assure the success of the next meeting. In view of the historic interest which the Columbian celebration lends to the meeting, it is highly desirable that American ophthalmology should be well represented by the names and presence of those who have contributed to its present advanced position. S. D. Risley, M.D., Chairman, 1722 Walnut Street, Philadelphia; H. Gradle, M.D., Secretary, 65 Randolph Street, Chicago.

BOOKS AND PAMPHLETS RECEIVED.

On Anesthesia from Ether. By James W. Guest, M.D. Reprint, 1892.

Introductory Address at the Chicago College of Physicians and Surgeons, Session of 1892 and 1893. By G. Frank Lydston, M.D. Reprint, 1892.

Remarks on So-called Urethral Fever. By G. Frank Lydston, M.D. Reprint, 1893.

The Mydriatics in Ophthalmology. By S. D. Risley, M.D. Reprint, 1893.

Abscess Around the Rectum. By Charles B. Kelsey, M.D. Reprint, 1893.

Treatment of Atrophic Retinitis. By M. D. Lederman, M.D Reprint, 1893.

Intra-cranial Neurectomy of the Second and Third Divisions of the Fifth Nerve. By John B. Roberts, M.D. Reprint, 1892.

Tumor of the Liver in which Removal was Attempted. By John B. Roberts, M.D. Reprint, 1892.

Some Physiological Experiments with Magnets at the Edison Laboratory. By Frederick Peterson, M.D., and A. E. Kennelly. Reprint, 1892.

The Cosmetic Surgery of the Nose. By John B. Roberts, M.D. Reprint, 1892.

Fel Bovinum as a Therapeutic Agent. By D. H. Bergey, M.D. Reprint, 1893.

Report of the New York State Board of Charities on the Selection of a Site for, and the Organization of, an Epileptic Colony. Transmitted to the Legislature, January 11, 1893.

A Case of Acute Purulent Inflammation of the Middle Ear, with Double Optic Neuritis, but without Tenderness or Swelling of, or Spontaneous Pain in, the Mastoid Process; in which the Opening of the Mastoid Cells was followed by a Rapid Subsidence of the Optic Neuritis and Cure of the Ear-Disease. By Charles J. Kipp, M.D. Reprint, 1892.

A Case of Bilateral Recurrent Inflammation of Tenon's Capsule in Connection with Profound Mercurial Poisoning. By Charles J. Kipp, M.D. Reprint, 1893.

Santonin as an Emmenagogue. By D. H. Bergey, M.D. Reprint, 1893.

The Nervous Affections that May Arise from Malaria. By Walter Browning, M.D. Reprint, 1893.

A Synopsis of the Various Points of Interest in Post-mortem Examinations. By Charles H. Merz, M.D. Reprint, 1893

Syringomyelia. By J T. Eskridge, M.D. Reprint,

Arterial Saline Infusion. By Robert H. M. Dawbarn, M.D. Reprint, 1892.

Official Reports of the Trustees and Officers of the State Hospital for the Insane, at Danville, Pa., from October 1, 1890, to September 30, 1892. Danville: Sun Publishing Co., 1892.

A New Method for Treating Cases of Suspended Animation with an Insufflator. By Edwin De Baun, M.D. Reprint, 1893.

The Use of the Currette in Uterine Surgery. By A. Vander Veer, M.D. Pamphlet. Albany, N. Y.: C. F. Williams.

Senn's Great Surgical Clinics at the Rush Medical College, Chicago. By G. Wiley Broome, M.D. Reprint, 1893.

Discussion of Dr. Vaughan's Paper. By Bayard Holmes, B.S., M.D. Reprint, 1892

The Forthcoming Report of the Bureau of Education on Professional Education in the United States. By Bayard Holmes, B.S., M.D. Reprint, 1893

Fifteenth Annual Report of the Presbyterian Eye, Ear, and Throat Charity Hospital, 1892. Baltimore: John S. Bridges & Co., 1893.

The Methods of Examining the Blood. By Alfred Stengel, M.D. Reprint, 1893.

The Technique and Diagnostic Value of Ehrlich's Method of Staining the White Blood-corpuscles. By Thomas S. Southworth, M.D. Reprint, 1893.

The Treatment of Hernia. By Alexander Dallas, M.D. Pamphlet. New York: Edgar P. and St. Co., 1893.

The Bicycle in its Relation to the Physician. By Seneca Egbert, A.M., M.D. Reprint, 1892.

Uric Acid Gravel and Gout. The Croonian Lectures for 1892, with Additions by Sir Wm. Roberts, M.D., F.R.S. London: Smith, Elder & Co., 1892.

Eighth Annual Report of the Adirondack Cottage Sanitarium, Saranac Lake, N. Y., November, 1892.

The Twelve Tissue Remedies of Schussler. By Wm. Boericke, M.D., and Willis A. Dewey, M.D. Third edition. Philadelphia: Boericke & Tafel, 1893.

Some Ocular Perceptions, and how they are Influenced by Lenses. By R. J. Phillips, M.D. Reprint, 1893.

The Ocular Complications of Erysipelas. By R. J. Phillips, M.D. Reprint.

Handbook of Insanity for Practitioners and Students. By Theodor Kirchhoff, M.D. New York: Wm. Wood & Co., 1893.

Optometry. By Flavel D. Tiffany, M.D. Reprint, 1893.

The Johns Hopkins Hospital Reports. II. Report in Pathology. Contents: I. Papillomatous Tumors of the Ovary. II. Tuberculosis of the Female Generative Organs. By J. Whitridge Williams, M.D. Baltimore: The Johns Hopkins Press, 1892.

Transactions of the American Orthopedic Association. Sixth Session. Vol. V. Philadelphia: Published by the Association, 1893.

[1] By a minor course is understood one that requires a year for its completion. In physics, five class-room exercises and three hours a week in the laboratory; in chemistry and biology five class-room exercises and five hours a week in the laboratory in each subject are required. Applicants for admission will receive blanks to be filled out relating to their previous courses of study.

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ORIGINAL ARTICLES.

REPORT OF A CASE OF A LARGE ABDOMINAL ECHINOCOCCUS CYST: WITH REMARKS.[1]

BY M. STAMM, M.D.,

PROFESSOR OF OPERATIVE AND CLINICAL SURGERY IN WOOSTER UNIVERSITY, CLEVELAND, OHIO.

MRS. A. H., forty-nine years old, a native of Germany and a resident of this country for four years, has borne seven children, the last twelve years ago. Menstruation has always been regular. The general health was good until eight years ago, when, after having engaged in laborious work and perspiring profusely, she experienced severe pain in the right inguinal region; the abdomen became enormously enlarged and painful and the legs edematous. A surgeon who examined her at this time stated that there was a tumor, and proposed an operation, to which patient would not consent.

She was afterwards treated by a midwife, with external applications and internal remedies, which, according to patient's statement, acted on her bowels and increased the flow of urine very materially; and after a period of fourteen weeks led to her recovery. Her abdomen became somewhat reduced in size, but never to the normal. Her health was afterward tolerably good up to September 9, 1892, when, while perspiring, she exposed herself to the chill air.

I saw her September 14, when she complained of a pain in the umbilical region; she had slight chills and vomiting; her temperature varied between 99° and 100°; her pulse was about 110 per minute. On examination I found a spherical tumor originating from the pelvis and reaching about two inches above the umbilicus. It was not very tense, but fluctuating, somewhat like a unilocular cyst.

On percussion there was an absence of tympanitic sound in either iliac region, and even after turning the patient from side to side the dulness was not diminished. The tumor thus appeared to be immovable. On the right side especially I could feel a soft mass resembling omentum. On vaginal examination the neck of the uterus was found imbedded in a cystic mass which reached low down into Douglas's pouch. Traction would not bring the uterus down much. The organ, therefore, could not be outlined and did not seem to be very movable.

Bimanual as well as rectal examination threw no further light upon the question of diagnosis. Of course, the thought of the cyst being ovarian was uppermost in my mind; still, the long history and the peculiar course led me to suspend my diagnosis. All the different conditions met with in abdominal surgery were more than once passed in review. Even the thought of an hydatid cyst entered my mind for a moment and prompted me to ask the patient whether she had ever been in close contact with dogs; but, on her answering in the negative, the thought was pushed into the background again.

I had never before seen a case of hydatid cyst, and, though the undulations on percussion of the tumor were quite distinct, I did not at that time consider myself competent to compare them with the characteristic hydatid tremor; nor was I able to judge if the phenomenon were more aptly expressed by the English word "tremor," or the German "Hydatidenschwirren" or the French "froissement hydatique." Viewed in the light of experience, however, I should think that the word "tremor" is the most expressive. As a matter of fact, some German authors also use the word "Hydatidenzittern," which corresponds with the English "tremor."

After a few days' observation I proposed an operation; but, strengthened by her former experience, the patient did not accept my proposition. She was subsequently seen by several physicians who, I am informed, also advised operation. To counterbalance our opinions a midwife, from some distance, was called in, who frankly admitted that the condition was beyond her extensive obstetric experience.

On October 21, I was called again, and found the woman much emaciated, with a rapid and feeble pulse. Her abdomen was enormously distended and her legs edematous. She could not retain much food, and dyspnea was present. On the left side, in the iliac region, I could trace the sigmoid flexure extending toward the median line, but from here it was lost in the pelvis. The dyspnea and other symptoms finally became so aggravated that she herself urged an operation. I prepared myself to deal with more than a simple ovarian cyst, and was assisted by Drs. Caldwell, Kinsey, and Thomas. The delay in operation had one good effect; the cyst was firmly adherent to the peritoneum, so that I punctured it with the knife before I was aware of it. Some purulent fluid escaped through the small opening, and I immediately enlarged the incision to about 2½ inches.

Probably the first quart of fluid was mixed with pus and a number of small hydatid cysts of from about the size of a California grape up to a large plum. The rest of the fluid was clear; it nearly filled a tobacco pail, and contained 300 daughter-cysts, filled with clear fluid, and, besides, two large echinococcus membranes. The cavity was irrigated with a solution of corrosive sublimate.

Introducing my fingers into the sac, I found it universally adherent. The adhesions seemed to be firmest in the right iliac fossa and along the spinal

[1] Read before the Northwestern Ohio Medical Association, December 15, 1892, at Lima, Ohio.

column. An attempt to enucleate part of the sac was followed by free hemorrhage, so that on account of the patient's feeble condition I desisted. The sac was, therefore, stitched to the wound and drained by means of a glass tube and iodoform-gauze strips. Four hours after the operation the patient's temperature was102°, the pulse 120°. After that the temperature varied between 99° and 100°, except on the fourth day, when, at about noon, the patient had a slight chill, and the temperature rose to 103°. I attributed this rigor to a gastric derangement, especially as she vomited once, and a dose of calomel relieved all the symptoms, and she made rapid progress towards recovery, although with a slight elevation of temperature for ten days. After a day or two the sac occupied the right iliac region and pointed to the iliac fossa as its starting-point.

As hydatid disease is quite a rare affection in this country, it may not be out of place to dwell at some length upon the most important practical features of the subject, the more so as we find comparatively meager reports of it in American literature as far as I have had access to it.

Etiology. Echinococcus disease seems to be almost endemic in Iceland and in Victoria (Southern Australia). In Iceland we find one case to from every 61 to 82 inhabitants; in Victoria the annual mortality from echinococcus disease is 3.07 per cent. To a less degree we find it in the northern part of Germany; in Mecklenburg there is one case to every 12,879 inhabitants; in Pomerania probably the proportion is lower still. Osler collected eighty-five cases in this country up to July, 1891.

The disease is caused by the eggs of the tenia echinococcus, of which the dog seems to be the usual carrier; parts of the tenia may gain entrance to the intestinal canal with drinking-water or uncooked fruits and vegetables, as lettuce, etc., which may not have been thoroughly cleaned and to which the fecal matter of the dog may readily adhere. On questioning my patient, after the operation, she stated that she obtained her drinking-water from neighboring creeks and very often drank some from surface-holes on peat-land, to which shepherd dogs had access; besides drinking they would bathe in the water and deposit their feces in it. She stated further that a shepherd had died with an enlarged abdomen some time after she had become sick, and that quite a number of persons in her neighborhood had died with dropsical affections, which, in the light of her illness, might be suspected as having been echinococcus disease. The countries in which echinococcus disease is common raise many sheep and cattle, which, it is known, are even more prone to the affection than man.

The woman stated further that a large number of sheep about her die of a disease called "Filsch," which is probably echinococcus of the brain (Drehkrankheit), and that their behavior was remarkable. This statement accords with that of Richardson: "It does not require much imagination to follow the course of these embryonic tape-worms eaten by the shepherd dog. They are matured in the dog, passed as tape-worms over the pasturage of other sheep; the ova are again taken into the stomach and system of the sheep, and circles of propagation are established." After some parts of the tenia echinococcus have reached the intestinal canal the eggs perforate its walls and find a nidus in the liver, by way of the portal system or biliary passages, or in the spleen, or, as in my case, somewhere in the pelvis. The echinococcus cyst is there formed by the embryo, and seems to consist of two distinct layers. The inner layer, composed of granular matter and cells, consists of muscular fibers and vessels, and is called the parenchymatous layer. The outer layer is called the cuticle; it is very elastic and shows very fine parallel layers. Its growth is slow; at the end of four or five months it may only attain the size of a small walnut; at this time the brood-capsules, of the size of a pin-head, are developed from the parenchymatous layer. From these brood-capsules the heads or scolices are formed, and they seem to take their origin from the sacculated outgrowths that project into the interior of the cysts. After these heads are formed they retract within the cyst; they have four sucking disks and one hooklet. A single brood-capsule may, with increasing age, contain a dozen or more scolices, and in consequence we may find an immense quantity in a large echinococcus sac, but we also find sterile cysts. Like any foreign body these cysts set up an irritation in the surrounding tissue, and in this way become enveloped in a layer of connective tissue, from 5 to 10 millimeters thick and of extreme tenacity.

The *diagnosis* of echinococcus cysts is generally very difficult, and cannot be made from one single group of symptoms. We should closely inquire into the mode of living and the surroundings of the patient. The knowledge that a patient has been in intimate contact with dogs is not sufficient. The slow growth of the tumor would almost exclude an ovarian cyst and weigh heavily in the balance of an echinococcus. It seems to me that the undulations were more distinct than are generally found in a unilocular ovarian cyst. The tumor also did not seem quite as tense and spherical as does an ovarian cyst. Hydatid tremor, caused by the presence of a large number of daughter-cysts, when present, is, no doubt, a very valuable diagnostic factor; but it is more likely to be absent than present. Vaginal examination in females, of course, should never be omitted. In my case the cyst descended between the vagina and rectum to a lower level than the neck

of the uterus; it also yielded a sense of greater laxity than an ovarian cyst; it had greater semblance to ascites, and, in fact, there may also have been ascites, as shortly after the operation I was still able to detect a soft, doughy condition.

If the tumor occupies the upper region of the abdomen we should see whether or not it moves with the respiration. Aspiration of the fluid contents of the tumor will no doubt give the best information, and this is recommended by some surgeons as a procedure devoid of danger. From the reports of some cases it would seem, however, that this procedure is not entirely harmless, as some of the contents might escape into the abdominal cavity and give rise to a new colony of echinococci. A case operated upon and reported by Krause has the significance of an experiment, as a puncture of a cyst was followed in six months by the development of multiple echinococcus cysts.

The pressure within the cyst is often so great that the fluid is ejected through the puncture-opening in a fine stream. In a number of cases urticaria, headache, vomiting, dizziness, and abdominal pain, and even peritonitis, have followed puncture, undoubtedly as a result of the taking up of some chemical poison (ptomaïnes, according to Schlagdenhaufen).

The situation is much aggravated if the fluid be purulent, unless adhesions be formed. The fluid is usually clear, free from albumin, but contains some sodium chlorid, sodium succinate, grape-sugar and inosite, and has a specific gravity of from 1008 to 1010. Microscopically we may find scolices, hooklets and shreds of the chitinous capsule. At times, however, the contents of the large mother-sac may become turbid, pulpy, greasy, yellow, or may even resemble tuberculous pus, though there may be still present a large number of viable daughter-cysts filled with clear crystal fluid. In isolated cases suppuration may take place in the contents of the sac. In such an event we naturally find albumin, and we can only then make a diagnosis by the presence of hooklets or pieces of the characteristic membrane.

If we find a yellow, soft, cheesy substance interspersed with the intact daughter-cysts and other contents, we should not be too hasty in pronouncing the condidition tuberculous before the matters have been examined under the microscope. Volkmann received into his clinic a case in which the diagnosis of coxitis was made. There was some indistinct fluctuation, and a tablespoonful of a yellow, pulpy mass, resembling tuberculous matter, was withdrawn by means of the aspirator. A resection was made, and the upper extremity of the femur, the joint, and the pelvis were found filled with a large number of echinococcus daughter-cysts, together with a grumous mass, having the appearance of scrofulous pus. Microscopic examination in this case would probably have cleared up the diagnosis.

The *treatment* can only be prophylactic or operative. The attention of the public ought to be drawn to the danger of drinking water from shallow wells or surface holes. The practice of fondling or kissing dogs should be interdicted. Dogs should not be allowed to eat or drink from the vessels used by human beings. Special care should be taken in slaughter-houses and other places to dispose immediately and safely of refuse matter. If dogs show symptoms of tape-worm they should receive appropriate treatment. The fox has also been spoken of as being a source of infection; but I doubt if hydatid disease has ever been directly communicated by this animal.

Respecting the operative treatment, I shall limit my remarks simply to hydatids of the abdominal organs. The use of caustics as employed before the antiseptic period; of electrolysis, introduced by Althaus; of double puncture, practised by Simon and his contemporaries, with a mortality of 33 per cent., has to-day merely historic interest. Simple aspiration or tapping has also been advocated by some authorities as a curative measure. But I need simply refer to what I have said under the head of diagnosis to point out its dangers. Should we really wish to resort to tapping, the only safe method would be to make a large incision, so that we can examine the tumor and its connections, and thereby find the most suitable point for puncture.

Chaintre[1] reports a case of echinococcus of the spleen which was operated upon by Ollier. The original intention was to make a large incision into the tumor and empty it at once, but on more careful examination it was found that to do this it would be necessary to go through some tissue of the spleen, which might be followed by profuse hemorrhage. Silver sutures were therefore passed through the abdominal walls, uniting the peritoneum to the skin, and then, by a few more sutures, the tumor was fixed to the wound. To the trocar, through which a portion of the contents of the sac had already been emptied, he attached a rubber tube, passed through an antiseptic dressing, and kept closed by means of hemostatic forceps, but opened six or seven times a day to permit some of the fluid to escape through the tube. About five days later the trocar was removed and the opening dilated with laminaria tents, and then a drainage-tube of the size of six millimeters was introduced.

The principal methods that surgeons now employ are operations concluded either at one sitting or at two or more sittings, and total extirpation of the sac. Opinions are still divided as to operating at one or more sittings. Volkmann was the first to recommend

[1] Revue de Chirurgie, Oct., 1890.

the performance of the operation in two sittings, and his results, together with those of his followers (31 cases without a death), add weight to his recommendation. Koenig, who at first also operated after Volkmann's method, in two sittings, now advocates the performance of the operation in one sitting, and apparently with equal success. The statistics, however, speak in favor of the operation in two sittings, and this seems to me the best when profuse hemorrhage is to be anticipated or when the sac communicates with the bowel or the bronchial tubes. Of course, the condition of the patient may sometimes call for immediate relief, and in such a case, with proper care, we may risk an operation in one sitting. The latter method, I think, can nearly always be adopted in cysts of the pelvis; owing to the difficulties in diagnosis, the sac is generally opened before the operator is fully aware of the nature of its contents.

I shall now give the different steps of Volkmann's method. It is scarcely necessary to say that the patient and everything that comes in contact with him should be in a perfectly aseptic condition. The operation may be performed under an anesthetic, preceded by an injection of morphine, or, if vomiting is feared, a hypodermatic injection of cocaine may secure sufficient local anesthesia. The incision should be about four inches long in the direction of the long diameter of the tumor and in a situation where fluctuation is most distinct.

Hemorrhage should be fully checked before the peritoneal cavity is opened. Should the omentum be present, it can be pushed aside or divided with the scissors between two ligatures. After the tumor is exposed the wound should be packed with iodoform-gauze, over which is placed a thick layer of absorbent cotton, wood-wool, or moss. These are fixed by means of muslin bandages. The patient should be supported by pillows placed beneath the spine; the pelvis should be slightly raised, and two nurses should at the same time make slight traction on the extremities and shoulders. Over the dressing a dry, wide flannel bandage is tightly applied, and over this a gauze bandage. The dressing can be left undisturbed for eight or ten days. It is well to give the patient injections of morphine for the first few evenings, to keep him perfectly quiet.

After eight or ten days the sac can be opened. Should the adhesions prove not to be firm enough, a few sutures may be added. Koenig advises that a few sutures be placed between the wound and the sac at the first sitting, to protect the tumor from injury through respiratory movements. We may then introduce a small aspirator, to determine the thickness of the cyst-wall; if this be not very great, we can use the knife; but if the tumor has a cyanotic and congested appearance, it were better to use the thermo-cautery, and make the opening as large as possible. The fluid and the daughter-cysts will escape in a powerful jet, which can be interrupted or retarded by pressure with a sponge or gauze, and the flow may, toward the end, be assisted by irrigation with a solution of boric or salicylic acid.

The cyst is at times very brittle, but generally, with some caution, it can be removed with the finger or forceps in part or in toto. After its removal we again wash out the sac and introduce a good-sized drainage-tube, over which we place a thick, absorbent dressing, and have it changed in accordance with the amount of discharge.

The sac shrinks considerably after the operation, and it may disappear entirely in the course of seven or eight weeks, but in exceptional cases the process may take a full year. Tumors of the convex surface of the liver may have to be opened through the pleural cavity.

James Israel, of Berlin, in 1879, reported a case in which he operated in three sittings. He first removed about one inch of the sixth rib in the axillary line and opened the pleura. The cyst pushed the diaphragm immediately into the wound. A gauze tampon and a Lister dressing were applied over it. After seven days the diaphragm and its underlying peritoneum were opened and again tamponed. Nine days later the liver-tissue, about two lines in thickness, and the cyst-wall were incised. After having evacuated the fluid and daughter-vesicles the sac was drained through the pleural wound. The discharge was profuse, periodically mixed with bile after the third day, and the patient was completely cured after nine and a half weeks.

The operation in one sitting differs very little from Volkmann's method, except that the sac is temporarily fixed to the wound by a few sutures, and a pad of iodoform is placed around the edges to prevent the entrance of fluid into the abdominal cavity. After the sac has been emptied and thoroughly irrigated it may be pulled out a little further and then stitched to the skin. It is claimed that this method has the advantage over the operation in two sittings of more speedy recovery, and that it may be possible to remove secondary cysts, as these are more readily detected after the first cyst has been emptied. This may be true to some extent. If, however, we make it a rule to examine the tumor in every direction immediately after the abdomen is opened, it ought not to be difficult to detect other cysts, and they might be emptied by puncture through the first cyst, or by incision in a more suitable situation.

In exceptional cases we have such a number of cysts distributed over the abdominal cavity that their removal may appear impossible. Very few cysts can

be completely extirpated; sometimes we may excise part of the sac. Bergmann, in one case of hydatid of the spleen, extirpated the whole organ for reasons that I fail to comprehend.

In echinococcus of the liver patients are sometimes troubled after operation with a profuse discharge of bile through the wound. A slight discharge, though it continue for some time, has no bad effect; but the cases that in this connection occasion concern are those in which all of the bile finds its way out through the wound. In patients already feeble from the effects of the tumor, nutrition may become seriously disturbed by the total absence of the bile from the intestinal tract. The latter condition may be caused by an obstruction (coagulum), by kinking, or by opening of the common duct into the sac, as a result of an erosion. We have no operative means to relieve these conditions. If the patient's strength holds out, time will finally bring the remedy.

A COMPARATIVE STUDY OF THE PHYSIOLOGICAL ACTIONS OF BRUCINE AND STRYCHNINE.

By EDWARD T. REICHERT, M.D.,
PROFESSOR OF PHYSIOLOGY, UNIVERSITY OF PENNSYLVANIA.

But little experimental and clinical investigation has been made with brucine, its more potent and cheaper sister-alkaloid, strychnine, having overshadowed it. However, what records we do possess indicate, for the most part, that these substances exert essentially the same influences upon the organism, the differences being in degree rather than in kind. One serious difficulty met in the studies of the actions of brucine has been that the preparations commonly found in the market are, to a greater or less extent, contaminated with strychnine, usually to such a degree that whatever actions might have been exerted by brucine seemed entirely superseded by the more powerful influences of the strychnine. Thus, in the elaborate experimental study of brucine made by Wintzenried (*Inaug. Dissertation*, Geneva, 1882) the results so closely resembled those caused by strychnine that it is still believed by many leading pharmacologists that the phenomena were due to the contaminating strychnine.

There are, however, on record certain statements which lead to the belief that brucine does possess physiologic properties entirely distinct from those of strychnine. Thus, Mays, in observations on frogs and man (*Therapeutic Gazette*, June, 1885), found that pure brucine acts as a strong local anesthetic, and Robins (*Philadelphia Medical Times*, 1879, p. 228) also noted that this substance depresses the sensory nerves. Mays asserts that brucine induces in the frog a short period of motor weakness, or even paralysis, in the posterior extremities preceding the period of convulsions. There is also evidence to indicate that brucine is of the nature of a motor paralyzant (Klapp, *Journ. Nerv. and Ment. Disease*, 1878, p. 619; Wintzenried, *loc. cit.;* Robins, *loc. cit.*). Finally, Brunton states (*Journ. Chem. Society*, 1885, p. 143) that brucine is innocuous when taken by the stomach.

While we thus have reasons for the belief that there are important dissimilarities in the physiologic actions of these two alkaloids, it is not possible in the light of present knowledge to say to what extent they are due to variations in the purity of the drug used, to dosage, to the differences in the species of animals employed, etc.

The object of the present inquiry has been to determine to what degree important physiologic actions of brucine and strychnine are related. To that end essentially the same line of investigation was carried out as in my recent elaborate research with strychnine (*Therapeutic Gazette*, March, April, May, and June, 1892), which will form the basis of comparison with the results of the present investigation. Over 100 experiments were made, about one-fourth being upon dogs, and the remainder upon frogs. The brucine was made by Merck, a standard preparation, guaranteed to be *absolutely free from strychnine*. The specimen was subjected in our laboratory to the most rigid testing, and the results fully substantiate Merck's claim.

In the frog, after *minimal* lethal doses, no marked differences are observed in the results caused by brucine or strychnine, other than that the former is less prompt in action, that the motor disturbances caused by it are of less violence, and that it affects the volitional centers sooner and more powerfully. In the brucinized frog a failure of voluntary motion and an increase of reflex excitability are simultaneously developed, the former progressing usually with greater rapidity than the latter, so that volitional movement is, as a rule, lost before the exaltation of reflexes is sufficient to provoke convulsions. This loss of voluntary motion may be mistaken, as by Mays, for a general condition of motor paralysis. In the strychninized frog voluntary motion is also lost, but never until after the onset of convulsions. The differences, therefore, are not in kind, but in degree; brucine acting with less vigor as a convulsant, and with greater power upon the cerebrum. After the administration of much larger doses absolutely no differences are detected in the phenomena exhibited by the two sets of frogs. Brucine being absorbed with less readiness than strychnine is consequently less prompt in its effects.

The belief of Robins and Mays that brucine depresses the sensory nerves, leading to the conclusion that this action is unlike any of strychnine, is true

in fact, but not in deduction. Neither exerts any influence on the sensory nerves in minimal lethal doses, but both depress and finally paralyze these nerves when the poisons are given in great excess.

In the mammal, as in the frog, the only important differences in the phenomena noted are those of degree, and not of kind.

The statement made by Brunton (*loc. cit.*) that brucine is innocuous when administered by the stomach is not supported by sufficient evidence to give it any value, and, besides, is contradicted by the results of my own experiments. Brunton's conclusion is based upon the result of a single and by no means satisfactory experiment made upon a rat, to which he gave 0.1 gram of pure brucine, mixed with suet, so that the animal ate it readily. The rat was not affected by the dose, although another, to which the same quantity was administered by injection into the abdominal cavity, fell into convulsions within three minutes and died.

The records of one of my experiments will be sufficient to prove that absorption does take place through the stomach, but with much less rapidity than in the case of strychnine:

EXPERIMENT.—Dog; weight, 8617 kilos. 9.30. Gave per stomach through a catheter, 0.18 gram of brucine. 9.40. Acts as though he heard flies flying about his head; otherwise no apparent change. 10.30. An occasional twitch or jerk of the skin, or in one of the legs. 10.35. Twitchings and jerkings more pronounced and observed in the skin, ears, head, and extremities; reflex activity greatly increased, a slight touch causing considerable muscular disturbance; there is pronounced muscular stiffness, especially when any movement is attempted; respiration is very quiet and 24 per minute. 11.40. Vomits; respiration increased in frequency; and panting. 11.55. Salivation; marked rigidity; great hyperesthesia; a breath of air induces a condition of rigidity bordering on tetanus. 11.57. Tetanus, followed by slow, deep respirations, which gradually pass to those of a frequent and panting character. 12.20. Quiet and sickly; respirations, 140; profuse salivation; occasional slight spasms of the body and legs. 12.26. Opisthotonos; failure of respiration; heart continued beating for several minutes after the cessation of respiration.

The non-toxic result of Brunton's experiment is doubtless to be attributed to the extremely slow absorption of the poison, owing to its admixture with suet.

Whatever dissimilarities may exist in the actions of brucine and strychnine are best elicited by general and special studies, such as were pursued in the investigations with strychnine already alluded to.

When a 1 per cent. solution of brucine is injected into the external jugular vein of a dog, the general results which follow are not apparently in any way distinguishable from those resulting from the injection of strychnine. There occurs within a few moments a condition of muscular excitement, which rapidly passes into one of violent tetanic convulsions, and death ensues immediately from an arrest of respiration, or, after a time, from exhaustion. Should, however, forced artificial respiration be practised at and after the time of the convulsive seizures, the spasms gradually disappear, the general condition of the animal becomes in most respects the same as just before the convulsions, and the effects of the poison slowly wear away. But if with the appearance of the convulsions the injection of brucine or strychnine is continued, the tetanus grows less and less violent, voluntary motion is lost, reflex excitability rapidly disappears, the spasms give place to somewhat rhythmical jerkings of the muscles (choreic in character), and these to twitchings, which, in turn, are lost, and the animal lies absolutely motionless, save for the movements due to artificial respiration and the heart-beats. The circulation and heat processes, and other important functions, generally remain in good condition, and the dog may be kept alive for hours, if not days, thus paralyzed, if brucine or strychnine be from time to time injected.

The state of absolute muscular quiet is not, as a rule, of long duration, unless the dose has been unnecessarily large, for usually, in the course of fifteen or twenty minutes, fibrillary twitchings reappear, invariably in the inverse order of their disappearance from the various parts. These movements become more and more marked, gradually passing to violent rhythmical jerkings, and finally to clonic convulsions.

These remarkable changes from the normal state to violent tetanus, and finally to complete motor paralysis, occur with such rapidity that the latter stage may be reached within three minutes.

The quantity of brucine, when intra-venously injected, necessary to cause death, is about 0.008 gram to the kilo of body-weight; and of strychnine about 0.0002 gram. The dose required to produce absolute motor quiet is for both poisons about the same, being from 0.015 to 0.020 gram per kilo of body-weight; strychnine being, perhaps, a little more powerful. Thus, it will be observed that while strychnine is greatly more powerful as a convulsant, it is as a paralyzant of practically the same toxicity as brucine.

The relative toxicity of strychnine, compared with that of brucine, is, according to Magendie, 12:1, and according to Andral 24:1, and according to my experiments about 40:1 for the dog and about 50:1 for the frog. The differences given in the proportions of Magendie, Andral, and myself, respectively, are doubtless owing largely, if not solely, to the degree of purity of the brucine employed.

These figures by no means indicate, as before stated, the relative potencies of the two poisons upon different parts of the organism. As is well known, both substances cause death by asphyxia, which results from the violent convulsive seizures; but, as I have pointed out in my memoir on strychnine, the virulence of strychnine as a convulsant in relation to its other powers is so extraordinary that a fatal result ensues long before many other important actions are developed. It is only by the prevention of the continuance of the convulsive seizures, the use of artificial respiration, and the administration of comparatively enormous doses of the drug, that its full train of action is obtained. This statement holds good for brucine; consequently, the figures indicating that strychnine is so many times more powerful than brucine signify that it is that many times more potent as a convulsant; and they must not be taken as an expression of the relative intensities of the actions of the drugs on the various parts of the economy. In some respects brucine is of equal toxic value in its action; in other respects, of greater value; and in still other respects, of less value.

A careful comparison of the results of the detailed studies made with these alkaloids shows so few and unimportant differences that the conclusions arrived at from the study of strychnine are applicable to brucine, with slight additions and modifications. In the following summary where differences exist they are distinctly stated; otherwise it may be considered that the actions and effects are identical.

1. The minimum lethal dose of brucine for the dog, when intra-venously injected, is about 0.008 gram to the kilo of body-weight, and of strychnine about 0.0002 gram, the relation being 1:40. In the frog the minimum lethal dose of brucine is about 0.1 gram, and of strychnine about 0.002 to the kilo of body-weight, when subcutaneously injected.

2. Doses of from 0.015 to 0.020 gram to the kilo intra-venously injected cause a condition of absolute muscular quiet, and by means of artificial respiration the animal may be kept alive in excellent general condition.

3. Quantities in excess of 0.1 gram to the kilo may be intra-venously injected in divided doses without causing death, provided that artificial respiration be employed.

4. The toxic actions of brucine and strychnine are so directed to the motor center in the spinal cord that the minimum fatal dose is exceedingly small, owing to the production of asphyxia or to exhaustion by the violence and persistence of the tetanic seizures. Should artificial respiration be maintained, about 500 times the minimal lethal dose may be injected without an immediately fatal result.

5. By a proper regulation of the size of the dose and the method of administration, the stage of excitement may be prolonged over an almost indefinite period, or may be so brief as to last for but a few seconds.

6. During the *stage of excitement* the following actions and effects are observed:

a. The motor disturbances and convulsions are of spinal origin.

b. The sensory nerves and muscles are unaffected.

c. The motor nerves, after the onset and continuance of convulsions, become depressed from overwork.

d. The pulse-rate is first lessened in frequency, then increased, and finally diminished. The first effect is due to a stimulation of the cardio-inhibitory apparatus, the second to its depression, and the last to a depression of the excito-motor ganglion, or automatic-motor ganglion in the heart.

e. The arterial pressure is primarily diminished, then greatly increased, and at last diminished. The first effect is due to some obscure action on the vasomotor centers in the medulla oblongata; the rise of pressure to a stimulation of the vaso-constrictor centers in the same part; and the final fall, to a depression of the heart and vasomotor centers. In curarized animals the rise of pressure due to stimulation of the vasomotor centers is relatively and absolutely greater than in the non-curarized animal.

f. The respiration-rate is not specifically affected, unless it be in the nature of a decrease, or during the period of convulsions, when it may be decidedly increased.

g. The bodily temperature is increased.

7. During the *stage of paralysis* the following are noted:

a. The muscles are not in the least affected, unless after enormously excessive doses.

b. The sensory nerves are inexcitable to strong electric currents.

c. When the motor nerves are subjected to a powerful faradic current, spasm of the muscles supplied no longer occurs, although the nerves transmit impulses from the nerve-centers—irritability is lost, but conductivity remains.

d. The pulse-rate is reduced, but the height of the curves is increased; the first effect being due to a depression of the motor ganglia in the heart, and the second effect to the greater filling of the viscus with blood, and perhaps to a direct stimulation of the heart. The cardio-inhibitory fibers are paralyzed, but no increase in the frequency of the pulse-rate is observed, owing to the predominance of the depressant action on the heart-ganglia. Stimulation of the vagi causes smaller pulse-curves, and a slight increase in the frequency of the beats.

e. The arterial pressure is increased, unless the dose has been greatly in excess, when it is diminished. The increase is due to a stimulation of the vasomotor centers in the medulla oblongata, and the decrease to a depression of the heart and to vasomotor paralysis. The increase of pressure is greater and more persistent in curarized animals. In non-curarized animals the pressure sinks below the normal immediately after the tetanic paroxysms, but in those curarized this depression is less marked. Asphyxia and electric stimulation of a sensory nerve fail to cause a rise of pressure, as in the normal animal; on the other hand, asphyxia is always accompanied by a fall.

f. The hemoglobin is in some way affected so that it cannot be oxygenated to the normal degree, although the spectroscope reveals nothing but oxyhemoglobin.

g. The temperature may be increased or decreased by brucine, but is always increased by strychnine. Cocaine is unable to cause its characteristic increase of heat-production and temperature, as in the normal animal. Apparently, both strychnine and brucine paralyze the accelerator thermogenetic centers, and leave intact the automatic thermogenetic centers.

h. The paralytic condition caused by strychnine and brucine closely resembles that produced by curare, but is in many ways entirely distinct.

8. The *chief differences in the physiologic properties of brucine and strychnine* are as follows:

a. Brucine is less rapidly absorbed than strychnine, and, as a consequence, is less prompt in its actions.

b. Brucine is from forty to fifty times less powerful as a convulsant, and, therefore, proportionately less fatal.

c. Brucine acts relatively more powerfully on the volitional centers in the frog than as a motor excitant, with the effect oftentimes of causing in these animals a loss of volitional movement preceding the stage of convulsions. In mammals, however, it does not seem that either poison ever destroys volition before the appearance of convulsions.

d. In excessive doses brucine is more poisonous to the sensory nerves than is strychnine.

e. During the last stage of the poisoning the action of brucine on bodily temperature is uncertain, while that of strychnine is positive. Brucine is, ultimately, a stronger depressant to the heart; and after enormous doses more toxic to the muscles.

9. The green frog (*Rana esculenta*) is somewhat more susceptible to brucine than the spotted frog (*Rana temporaria*). The same difference I have noted with strychnine.

The results of this research render it obvious that the physiologic actions of brucine and strychnine are essentially identical, the differences being practically solely in degree, and not in kind. This, together with the fact that the convulsant action of brucine is in the mammal about forty times less than that of strychnine, indicates that brucine will prove not only a safer drug, but of infinitely greater value as a general therapeutic agent.

PHYSIOLOGICAL LABORATORY, UNIVERSITY OF PENNSYLVANIA.

INFLUENCE OF DISEASES OF THE EAR UPON THE MENTAL AND PHYSICAL DEVELOPMENT OF THE CHILD.[1]

BY JOSEPH SCHNEIDER, M.D.,
OF MILWAUKEE, WIS.

THE senses are the media through which impressions from the outside world are transmitted to the brain, and upon the accuracy of these impressions depends the quality of the conception or thought. Besides hereditary and congenital gifts, the primary factor in mental development is dependent upon the accuracy of the constitution of the special senses, and the impressions which the infant brain receives through these senses from its environment provide the material out of which are formed perceptions and conceptions. The fundamental value of the special senses for the development of the mind is already conceded, and, therefore, the more accurate the development of the special senses, the higher and more accurate will be the percept; for example, when a child sees everything indistinctly (as in myopia), or hears only a confusion of sounds, then the ideas accompanying the images or sounds will also be indistinct and confused. This important fact of the relation of the sense-apparatus, especially of the eye and ear, to the educational development of the child has been recognized by physician and teacher, and has been considered of such vital importance that of late years special attention has been given it by eminent scholars; numerous projects have been brought forward, and books have been written in order to protect the child with defective sense-apparatus in its education and development; but what is very remarkable, most of the former schemes were for the special sense of seeing only, while those for the sense of hearing had been neglected until the most recent years.

A part of the explanation of this phenomenon can be found in the fact that the methods and instruments used in the examination of the eye are universal. These methods show us the slightest defect in the organ of seeing, and thus, for the slightest disturbances of the organ, as, for instance, in refractive and accommodative anomalies, immediate relief can be obtained. Far different from this is the detection of defects in the organ of hearing. Even to-day we have no exact universal methods; the

[1] Read before the Wisconsin State Medical Society.

watch-tick, the Politzer method, the tuning-fork, the voice, etc., are more or less faulty, and cannot be compared with the accuracy of the dot, letter, and color-test of ophthalmology. With the ophthalmoscope alone an examination and diagnosis can be made independently of the intelligence of the patient. The results of the ear-test depend upon many secondary considerations, as *e. g.*, upon temperature, environment, character of the voice of the examiner as to rapidity, clearness, and intensity, and also upon the bashfulness and reticence of a young patient. These facts may explain why the detection of these defects has been neglected—a fact to be regretted, as the ear takes a more prominent part in the child's development than the eye. In childhood the material used at home and at school appeals more to the ear than to the eye; before the infant has the full use of the eye it recognizes the voice of its mother and separates this voice from all other sounds, and long before the child has learned to read he has learned, through the ear, to talk.

From these facts we must recognize how important to the child is a disease of the organ of hearing, and as the ear is more prone to disease in childhood than any other organ, how injurious a defect it must be to the child's education and development. During this period, in which the organ is of most importance to the child, it is liable to involvement in a number of diseases which threaten, temporarily, to destroy its usefulness and in a majority of instances to cause permanent destruction. Among these diseases are scarlatina, diphtheria, measles, and cerebro-spinal meningitis. Bezold, who paid special attention to the subject, found that of 1807 school children the hearing was impaired in 23.74 per cent. through scarlatina; in 52.49 per cent. through measles; in 22.69 per cent. through diphtheria. Burkhard Merion[1] found that of 1950 school-children, the hearing was impaired through scarlatina in 85; and several others, among them Weil and Buerkner, have given statistics to show what dangerous consequences these affections bring to the child's hearing. Hereditary tendencies, congenital diseases, injuries by foreign bodies, and diseases of the nose and throat greatly augment the dangers—all of which led Troeltsch, after careful consideration, twenty years ago, to affirm that between the ages of twenty and fifty, if the hearing is not impaired in both ears, in one out of three, it is at least impaired in one ear—a condition that obtains even to-day.

The ravages that the acute infectious diseases in childhood produce upon the hearing can better be imagined than stated; the weaker ones die and only the stronger remain to tell the tale. In a large number of cases the functions of both ears are permanently destroyed, so that when we speak of the influence of defective ears on the child's education and development, we must speak of the lesser disturbances only.

The symptoms not being so conspicuous, as long as the child is taught by the home circle alone the consequences are overlooked and misunderstood. The defects will be compensated for at first by a greater amount of attention, but soon the child must suffer from its unmerited condition. The little one who can understand only half or wrongly the sentences, will answer not at all or not intelligently. The treatment accorded a child by its playmates on account of so-called "inattention," "laziness," or "bad humor," brings the first wounds to its feelings. A disagreeable, peevish, unfriendly child is often the result. The little one, putting forth its best efforts, realizes that he suffers unjustly. Every aurist can relate from personal experience how, through a proper course of treatment of the ear, a disagreeable, morose face can be changed into an intelligent, bright one.

As the child reaches the age for school the character of hearing plays a still more important rôle in its education. We are indebted for the first scientific observation upon this phase of the subject to Dr. William Von Reickard,[1] who found the following results: Taking as the standard for a normal ear the hearing of a watch-tick at a distance of from thirty to sixty inches, he found that, of 1055 examined, 22.37 per cent. could hear the watch from 10 to 18 inches only. Dr. Weil, of Stuttgart,[2] examined about 6000 school-children; taking as the standard for a normal ear the hearing of a whisper at a distance of from 20 to 35 meters, he found that 30 per cent. showed a defect in hearing. Of American aurists, Samuel Sexton[3] has examined 570 children (of whom 261 were negroes) and found that 13 per cent. showed pronounced defects of hearing. Norrell[4] examined 491 children. He found 72 with defective hearing on both sides, and 53 with defect on one side, *i. e.*, 25.5 per cent.

I do not affirm that defective hearing is always the shield for mental dulness. As I have already said, the hard-hearing pupil is not so easily detected, as is, for instance, a myope or hyperope, and it often occurs that a teacher mistakes a hard-hearing child for an inattentive one, and, therefore, the importance to teachers and parents of knowing that a dull child is often a dull-hearing child. Bezold

[1] Sammlung klin. Vorträge von Volkmann.

[1] Ueber die Bedeutung eines guten Gehöres für die Schulbildung, St. Petersburger med. Wochenschrift. Band xxix, 1878.

[2] Die Resultate der Untersuchung der Ohren, Zeitschrift für Ohrenheilkunde, Band xi.

[3] Zeitschrift für Ohrenheilkunde, Band xi u. xii.

[4] Ibid., Band xiii.

found that out of 1289 pupils examined, the aural functions were not normal in 296, and of these there were 241 whose defect was known neither by the child nor by the teacher. When a diseased condition is present variations in temperament have an important influence; a pupil, to-day bright and attentive, may be to-morrow dull and listless. The cause has not been attributed to its true source; an unjust judgment metes out severe and undeserved punishment, changing a bright sunny nature into a morose and sullen disposition.

Dr. Gellé, of Paris, has examined in several classes pupils denominated "bad" and "good." Of the 20 bad ones, six only could hear a watch-tick at a distance of one-half meter, and of the good ones there was none that could not hear the watch-tick at a distance of more than one half meter. On further examination it was found that, of seven pupils in the rear seats, placed there on account of laziness and inattention, four could hear the watch-tick at a distance of only from one-half to one-tenth of a meter, and two could hear with the right ear at a distance of not greater than one-half meter; with the left one-fourth of a meter. Of 12 boys designated by the teacher as poor pupils only two had normal hearing, and 10 showed disturbances in one or both ears, and neither parents nor teacher knew of their condition.

As the normal condition of the ears is one of the necessary factors in a child's mental development, a defective condition will lead to a defective development. Much of the material for his education will be useless or misapplied; thoughts become confused, the continuity of ideas broken. Through new and unsuccessful efforts to grasp the idea and to answer correctly, much of the brain-force is wasted; discouragement and unwillingness to make further effort follow. In this state of mind, smarting under the feeling of unjust judgment of teacher and parents, taunted by playmates and classmates, how can there be developed a sunny, happy disposition? All of us have had an opportunity to observe the actions of blind and deaf children and have remarked the change in the mental character of the child following the loss of a special sense.

From the authorities already cited I find that 2 per cent. of the children examined were suffering from suppurative otitis, and in the majority of cases tubercle-bacilli could be found in the secretion. This fact is of great importance, as our knowledge of the influence of infectious material shows that teacher and pupils are exposed to the infection through the impregnated air; aside from this the odor emitted is torture to those sitting near, and, therefore, laws should be enacted prohibiting children with "running ears" from sitting in the same room with other pupils.

I find further that 42 per cent. of the children suffering from ear-disturbances, if placed under proper treatment, showed a favorable progress. I think these figures sufficient to encourage us and give us the hope that the same attention will be given to the hygiene of the ear as is given to that of the eye. In these modern times, when a child grows to be master of so many branches of learning, there is needed a perfect condition and full development of all the senses, and especially of the sense of hearing.

THE USE OF CHLOROFORM AS AN ANESTHETIC: WITH A CASE.

BY JOSEPH B. COOKE, M.D.,
ATTENDING PHYSICIAN TO THE NORTHWESTERN DISPENSARY, DEPARTMENT OF DISEASES OF CHILDREN; ASSISTANT ATTENDING PHYSICIAN TO THE OUT-DOOR DEPARTMENT OF ST. MARY'S FREE HOSPITAL FOR CHILDREN, NEW YORK CITY.

THE object in reporting the following case is, primarily, to add to the already enormous number of arguments against the use of chloroform as an anesthetic in all instances in which ether can, by any possibility, be substituted, and incidentally to refer to the method of resuscitating the patient, by which means in this case life was undoubtedly saved:

CASE.—Priscilla ——, colored, eight and a quarter years of age, required a minor surgical operation about the genitals.

The room in which the operation was of necessity performed was so small that the operating-table stood in close proximity to a stove. This rendered the use of ether inadmissible, and chloroform was reluctantly employed, as cocaine-anesthesia had been unsuccessfully attempted on the previous day. The heart and lungs were normal, and the urine contained no albumin. The child was well nourished and in good general condition.

The administration of chloroform was commenced at 11.30 A.M., by my friend, Dr. Walter A. Dunckel, who used Squibb's preparation and a wire-frame inhaler. The anesthetic was well taken by the child, who neither struggled nor evinced any appreciable signs of fright.

Anesthesia was accomplished in fifteen minutes. A considerable quantity of chloroform, however (nearly ʒiv), was needed to produce narcosis, which was at no time complete, as the conjunctival reflex was present throughout.

The operative procedure was of two minutes' duration, and was attended by no loss of blood, and the anesthetic was stopped.

The respiration and pulse continued regular, and, under the circumstances, normal for fully a minute, when signs of embarrassed respiration became manifest. The neck was extended, and the jaw thrown forward, causing temporary improvement. The radial pulse now became very rapid and feeble, and ♏xx of brandy were given hypodermatically. The pulse responded slightly to the stimulation, but quickly became imperceptible at the wrist, and

respiration ceased entirely. The conjunctival reflex was now absent.

Dr. Dunckel at once grasped the child by the knees, and, holding it before him with the body hanging head downward, shook it vigorously up and down several times, somewhat after the method suggested by Prince.[1] The child was then replaced on the table, with the head lowered (preparatory to proceeding with the Sylvester method of artificial respiration and direct insufflation of the lungs), but she immediately gave a long gasp, followed by several short inspirations, after which respiration became regular and continued so. The pulse also reappeared at the wrist, but was still flickering and of poor quality, and ♏xv of brandy were injected in the leg. The heart did not yet respond as strongly as was desired, and a towel wrung out in very hot water was applied to the precordium. This stimulation strengthened the heart's action, and the child drew up its limbs somewhat, and cried out feebly. The pulse continued to improve slowly, but surely, and at the expiration of half an hour was 86, and of fairly good strength, while the respiration had become more deep and regular. The patient appeared, however, to be suffering from severe shock, and made feeble replies to questions after they were repeated several times in a loud tone.

During the past five years I have either administered or witnessed the administration of an anesthetic in several hundred cases. In about 3 per cent. of these cases chloroform was used, and in the remainder ether was the agent employed. I have never yet, during ether-narcosis, witnessed a case of collapse that could be fairly attributed to the drug. Yet, in the comparatively small number of cases of chloroform-anesthesia that I have observed, I have already seen two most alarming instances of suspended animation, neither of which, however, resulted fatally.

In the case here described the operative procedure was merely the breaking up, with a probe, of some adhesions between the prepuce and the glans of the clitoris.[2]

This was accomplished so rapidly, when once begun, that, aside from the fact that it was an "operation(?) on the genitals" it can hardly be held responsible for the frightful symptoms that followed.

The other case mentioned (in which I took the part of a spectator only) was that of a boy of about ten years of age, who had received a severe contusion of the perineum and laceration of the deep urethra, with extensive extravasation of urine, calling for immediate external urethrotomy. He was suffering slightly from shock, but not alarmingly so. Chloroform had been given for about three minutes, when he went into sudden and complete collapse, from which he was resuscitated only by the most vigorous measures, continued for a considerable time. The operation was then performed under ether, with no further mishap.

In each of the instances detailed the anesthetic was exhibited with great judgment and skill.

In the case of the negro child the collapse was undoubtedly due to the chloroform, and to the chloroform alone; while with the other child the superior safety of the ether was at the time proved beyond the shadow of doubt.

When such results are added to the enormous mass of evidence that has been accumulating ever since chloroform was first introduced into medical practice, it seems only fair to ask that ether, so well proved to be the least dangerous agent of the two, should be employed in every case in which it is not absolutely contra-indicated.

Too many men make frequent use of chloroform because it is cheaper, less bulky, less irritating, and more easy of administration, than ether. This is an evidence of false kindness to the patient, and occasionally of actual laziness on the part of the physician, that cannot be too strongly deprecated.

The relative merits of the two drugs in cases of midwifery will not be discussed in this paper, but as to the "remarkable safety" with which chloroform may be given to children, I have grave doubts. It must also be remembered that children are not often subjected to the severe, protracted operations that are so frequently performed on adults. The majority of operations on children are of a plastic nature, undertaken when the general condition of the patient is good, or else they are of very short duration, such as the opening of an abscess or the curetting of a sinus.[1]

[1] Medical Record, September 17, 1892.

[2] This feature of the case, while not applying to the present article, is of special interest, as such adhesions are said to rarely occur in females of the negro race, and then *only* in those individuals who have a large admixture of white blood.

In this instance the adhesions were very complete, the prepuce covering the entire glans, and being so firmly attached that considerable force was necessary to effect the separation.

The parents of the child were both seen by the writer, and are full-blooded blacks.

Vide Morris, American Journal of Obstetrics, December, 1892.

[1] The entire number of operations performed at St. Mary's Free Hospital for Children during the year ending October 31, 1892, was 212. Of these, 149 (70 per cent.) were of the nature mentioned as follows:

Amputation of supernumerary finger	1
Circumcision	3
Straightening bent knee	1
Correcting deformity after fracture	1
Hare-lip	1
Osteoclasis, tibia, bow-legs	13
Osteotomy, " "	2
" of cuneiform	7
" " ankle	1
" " knee	3
" for genu valgum	11
" " talipes varus	1
Plastic operation on finger	1
Phelps's operation for talipes	3
Radical cure, hernia	8
" " hydrocele	2
Removal of congenital cyst of neck	1
Tenotomy, tendo Achillis	5
Curetting sinuses	41
Opening abscesses	43—149

Vide Annual Report for 1892.

On the other hand, the adult is usually placed under the knife when he has long been a sufferer from some surgical disease, or when he is in severe shock dependent on a serious accident. In either event his whole system is decidedly below par, and a fair comparison of the action of the chloroform in the case of the child is out of the question. When statistics are published to show that in an equal number of cases of chloroform-narcosis in adults and in children the death-rate attributable to the drug has been greater in the first class of patients, it must not be forgotten that they were by no means as well able to resist the toxic action of the drug as were the children, and that the conditions under which it was diminished were not the same, causing, in consequence, a serious fallacy in the argument.

There are one or two points in the administration of ethereal anesthetics to which I wish to refer briefly.

No one should attempt anesthetization unless he is thoroughly familiar with every known method of resuscitation in case an accident should occur, and it is of equal importance that he should have at hand, and ready for instant use, all the instruments and drugs that might, in any emergency, be needed.

A table, within easy reach, should be supplied with whiskey, tr. strophanthus, tr. digitalis, sol. strychnine sulph. (gr. $\frac{1}{50}$ to ʒj), and a hypodermatic syringe *filled* with whiskey, together with a mouth-gag, tongue-forceps, and the necessary instruments for the performance of tracheotomy.

In hospital practice these articles are usually provided, while in private practice they are often conspicuously absent, a syringe and little whiskey being deemed amply sufficient. There should also be some boiling water in readiness, especially during chloroform-anesthesia, as the direct application of a very hot wet towel to the precordium is one of the best and most rapid heart-simulants we have, being often effectual when there would be no time for any known drug to act, however administered.

These precautions should be taken preparatory to the exhibition of an anesthetic for any purpose whatever, whether for surgical examination merely or for a severe and protracted operation.

Of the various methods of artificial respiration, the Sylvester is probably best suited to this class of cases, but they are all so generally known as to need no further mention here. At the same time, however, any physician, who has never actually *seen* artificial respiration performed would do well to ask some one who is thoroughly familiar with the technique to demonstrate it to him, practically, on his own body. The knowledge so gained will never be forgotten, and may be the means of saving lives.

Direct insufflation of the lungs often proves of inestimable value, not only in cases of collapse during anesthesia,[1] but also in the suspended animation of the newly-born child.[2]

The method of resuscitation suggested by Prince,[3] and explained in part only in this article, is an important addition to our knowledge on this subject, and the plan described by Maass,[4] as in use at the Göttingen Klinik, is undoubtedly of great service.

341 WEST FIFTY-SIXTH STREET.

"MOUNTAIN FEVER."

BY HUBERT WORK, M.D.,
OF PUEBLO, COLORADO.

A MUCH-VEXED question among practitioners throughout the entire territory influenced in its climate by the Rocky Mountains is that of "Mountain Fever." The affection is believed by many to exist as a distinct type of disease, and is defined by Dunglison as "a form of fever said to be peculiar to the elevated regions of the Rocky Mountains, and seen only at an elevation of 7000 feet and upwards."

Mountain fever is not, I believe, a disease *sui generis*, but is a group of symptoms dependent upon other and distinct pathologic conditions.

Incomplete forms of specific continued fevers, such as typhoid and relapsing fevers, localized inflammations partially developed, acute catarrhal affections of the alimentary or respiratory mucous membranes, and disturbance or exhaustion of the nervous system, will, if diligently sought for, furnish a basis for diagnosis in all cases imputed to it. The so-called mountain fever of Colorado was discovered by the pioneer hunters and miners, and is yet believed by the laity and many physicians to be the result of some occult mountain influence, although it is diagnosticated on the plains at an altitude of 4000 feet and upwards.

So far as known, no believer in mountain fever has been able to assign to it any constant pathologic lesions, although it has been credited with many deaths, and its lesions have been the quest of many autopsies.

It is true, I believe, that a great majority of all so-called cases of mountain fever in adults can be safely classed under the head of simple continued fever, as described by James H. Hutchinson in *Pepper's System of Medicine*, but recognized and treated since the time of Hippocrates. In both diseases the attack may be sudden in onset, with chill and febrile reactions, or may be preceded by days of languor, loss of appetite, headache, muscular pains,

[1] This procedure is clearly explained in Agnew's Surgery, second edition, vol. ii, p. 288.

[2] Forest, Medical Record, April 9, 1892.

[3] Op. cit.

[4] International Medical Magazine, July, 1892. Medical Record, September 17, 1892.

and disturbed sleep. In both the fever rises rapidly, and has often reached its height before the patient seeks advice.

Vomiting and constipation are about equally common in each, but in either there may be diarrhea, without nausea. The headache may assume a darting, stabbing character, or the restlessness may merge into delirium; the longer continued the active symptoms the more tedious the defervescence in both diseases.

Many patients suffering from "mountain fever" present symptoms of hepatic derangement, with accompanying gastric disturbance, typical of what is known in some localities as "bilious fever," and readily yielding to mercurials, Rochelle salts, or podophyllin, with rapid subsidence of the threatening fever.

The type due to prolonged and exhaustive physical exertion and the subsequent disturbance of nervous equilibrium, however, presents less, and often no evidence of hepatic implication, but a higher range of bodily heat, with more active cerebral symptoms, and a cleaner and redder tongue. This type is most common among laborers who are exposed to the sun, and although recent arrivals at any given point of high altitude are more subject to the disease, they do not exhibit symptoms different from those who are already acclimated by many years' residence, except perhaps in point of severity.

The name "mountain fever" is limited by not a few physicians to this type.

It is true that those habituated to a low elevation experience great difficulty in accomplishing at an altitude of 4000 feet and upwards what was previously but an ordinary day's labor for them, and performed with ease at lower altitudes. This extra demand on the physical resources, under climatic conditions including great elevation and, during the fever season, intense mid-day heat followed by a low nocturnal temperature, with the consequent disturbance of the heat-centers, is a very productive cause of a fever which does not, however, present features sufficiently distinctive from those of simple continued fever to justify a separate name.

Identical exciting causes will produce similar groups of symptoms designated in this country as "mountain fever," but in lower altitudes as bilious, simple continued, catarrhal, idiopathic or malarial fever.

It is probably true that modified forms of typhoid fever are, next to simple continued fever, most frequently mistaken for mountain fever. Consequently there are physicians who believe them to be of identical origin, but modified in outward manifestations by climate.

It is a pertinent fact that, in localities where mountain fever is regarded as endemic, simple continued fever, so clearly described and given its place in medical literature, is rarely if ever spoken of, and the presence of malarial influences is strenuously denied.

It is very well known that climate is a potent factor in the etiology and symptomatology of many diseases, among which is typhoid fever, but it is impossible to reconcile with the identity of these diseases the facts that we have typhoid fever with its typical temperature-curves, febrile period, pathologic lesions, and other definite symptoms, while the only constant symptom of its supposed congener is fever, without characteristic features, but having irregular exacerbations and remissions, both as to time of recurrence and degree of severity.

From a list of some fifty patients admitted to the St. Francis Hospital at Colorado Springs during the summer and autumn of 1890, sent there with the diagnosis of "mountain fever," Dr. W. A. Campbell reported the tabulated histories of thirty-two cases at the annual meeting of the Colorado State Medical Society.

In eighteen the rose-colored spots of typhoid developed. In six they were absent, and in eight their presence or absence is not stated.

Post-mortem examinations of the five cases terminating fatally revealed the intestinal lesions of typhoid fever in all.

Campbell's observations, which have been thorough rather than extensive, convinced him that mountain fever may be either typhoid, malarial, intermittent, or remittent.

The onset of mountain fever is described as "abrupt and its duration from four days to eight weeks, terminating either by crisis or lysis." A febrile disease having such a variable fever stadium, argues against its own specificity and suggests the suspicion that it is a symptom dependent upon indefinite pathologic conditions.

Less harm is suffered by adults through the diagnosis of mountain fever than by children, in whom diagnosis is always more difficult and treatment most urgent.

It is far from easy to make a differential diagnosis between pneumonia in an infant and a disease said to be common to children, claiming for its prominent symptoms the sudden and persistent rise in temperature, anorexia, vomiting, accelerated respiration and restlessness, followed by stupor, with an absence of physical signs.

Meningitis, scarlet fever and measles, without eruption or with unnoticed eruption, develop symptoms entirely compatible with mountain fever as it is frequently described.

To rest upon the diagnosis of mountain fever as the disease, when the cause of it is some definite inflammation, the local signs of which are beyond

reach of observation, partially developed or transient, conditions common to children, is to multiply sources of error in diagnosis.

Seven years of search for this chameleon of diseases in a locality where tradition held it to be a necessary feature of acclimatization have failed to convince me of the inviduality of mountain fever; in my opinion it is simply the febrile manifestation of various diseased conditions capable of classification only as belonging to other diseases.

It would be to the credit of diagnostic accuracy if the vague term "mountain fever" were expunged from the nomenclature of Rocky Mountain practitioners. Its perpetuation, conveying the impression that it is a distinct disease, indigenous to the mountain regions, but without specific cause, lesions, characteristic symptoms, duration, mode of attack or retreat, can only serve to confuse diagnosis.

THE USE OF GOLD AND MANGANESE IN TUBERCULOSIS.

BY OSCAR H. MERRILL, M.D.,
OF CORINNA, MAINE.

NOT long ago it would have been little short of heresy to doubt the sufficiency of what has, irreverently enough, been called the bug pathology of tuberculosis. It is now, however, becoming daily more and more evident that the facts of human pathology cannot all be explained by the test-tube or the *Rein Cultur*.

There appears to be at present something very like a schism in Deutschland. One section of the German learned world has lately taken to eating the pure cultures generated by another section, and instead of promptly dying, as they should, the parties of the first part persist in living and thriving, to the great disgust of the parties of the second part—thus giving a scientific application of the old saw: "The proof of the pudding is in the eating." This practice ought to be encouraged, for, as a little reflection will show, we have here great possibilities in more directions than one.

Those who spend their days and nights with tuberculosis; who study the disease in its various forms in the different generations of the same family; who see and treat those delicate, scrofulous, hysterical creatures; who see acute tuberculosis kill one, tuberculous meningitis another, hip joint disease a third, acute rheumatism with endocarditis a fourth, while a fifth passes on into nervous invalidism, are pretty likely to think, if they do not say, that, after all, the tubercle-bacillus is a very small part of that vast field that we call tuberculosis. In our wild chase after bacilli with the higher powers, it is well to have a little care lest we become myopic, and fail to see some very plain facts regarding nutrition that lie just beyond our professional noses. Moreover, it seems probable that the essential facts that make for or against tuberculous degeneration lie far beyond the reach of the immersion-lens, in that vast labyrinth that we call physiologic chemistry.

The haters and critics of our profession will not soon tire of repeating the tales of those bacillus-hunters who, emboldened by a more or less cosmopolitan clapping of scientific hands, left their laboratories and entered the hospitals—with what result all the world knows.

In THE MEDICAL NEWS of January 30, 1892, a paper by the present writer was published on "The Use of Gold and Manganese in Tuberculosis;" and it now seems desirable to give some account of work in the same line during the past year. Twenty patients, in addition to those mentioned in the previous article, have, during the last sixteen months, been under treatment by this method. These cases have been studied as carefully and as critically as possible, and in estimating the results of treatment, it is believed that due account has been taken of those variations in the course of the disease, as it occurs in different persons, and of those natural periods of quiescence which, indeed, may occur without treatment of any kind and which have so often led the profession, as well as the laity, to mistaken conclusions.

In this last series of cases, as in the former, no serious accident, either septic or inflammatory, has occurred. Nevertheless, the following two instances will perhaps serve to show that some judgment, great care, and absolute asepticism are essential in using the remedy:

A man of thirty, with genital tuberculosis, having had an injection administered in the calf of the leg, called attention two days after to a considerable swelling of the part. There was also slight increase of pulse and temperature, and some discomfort, though he continued at work.

A lady of fifty, with chronic pulmonary tuberculosis had received the injections regularly for two months without inconvenience, and her weight had, in that time, increased thirteen pounds, when she gradually developed intense jaundice with swelling of the face, but without albuminuria. This condition soon disappeared on stopping the injections, but shows itself again when the remedy is used oftener than once in five days.

As these patients were all seen in private practice, they were never regarded as "clinical material," to be used for experimental purposes. Whether true or not, every one of them was assumed to be a "human being," with a life worth saving, and in the treatment nothing was omitted which seemed likely to do good.

Necessarily, therefore, in many instances some of the conditions essential to a rigid scientific investi-

gation were absent; but in a few cases, circumstances beyond control, such as the stupidity or prejudice of a patient, furnished nearly ideal conditions for a test-experiment. Thus, a young man with incipient pulmonary tuberculosis had been under treatment with cod-liver oil, creasote, arsenious acid, and some general hygienic measures, and in two months had gained five pounds in weight. After great efforts he was finally induced to receive the injections regularly, and in sixteen days his weight increased twelve pounds. He then failed to attend regularly and his weight decreased three pounds, though the general treatment was continued.

In a number of other cases the improvement was as surprising and nearly as rapid, though the proof of the influence of the injections was less positive. In the case of a woman with very slowly progressing chronic pulmonary tuberculosis of two years' standing, and whose environment was in every respect bad, no effect was apparently produced by forty injections. To be sure, there was some improvement, but not more than might have been expected from the other remedies which were given simultaneously. In a girl of twenty, with acute pulmonary tuberculosis, far advanced before coming under observation, the gold and maganese produced only slight and temporary improvement.

The remedy shows its value most markedly in the incipiency and in the first stage of pulmonary tuberculosis. Sometimes, as in the case cited, the change for the better is immediate—almost startling. More often, as might be expected, there has to be fought a longer battle, and victory comes later—in three, four, or six months.

It ought to be stated that nearly all of these patients belong to that great undisciplined class that pays little, if any, attention to directions concerning diet, clothing, ventilation, and general mode of life. With these people change of climate is not to be thought of, except those changes for which New England has become famous.

Ten years of experience in treating tuberculosis previously to 1891 gave little ground for hope under such conditions as exist here. In that year gold and manganese was added to the other measures employed; and though patients have been more numerous lately, only one has died from pulmonary tuberculosis, and that one had her demise precipitated by a railway accident. One other, seen too late, is *in extremis*. This is a very different record from any previously obtained, and after allowing for coincidences and other sources of error, a considerable part of this success must be attributed to the new method.

A medical neighbor, Dr. C. A. Moulton, of St. Albans, Maine, who is a very careful and conservative practitioner, has for some months been giving this treatment a trial in a number of cases, and he reports most encouraging results.

An experience of nearly two years seems to show plainly enough that we have here a remedy of real power—a remedy that refuses to pass into oblivion with potassium cantharidate, sulphuretted hydrogen, and many others of the same ilk. It will be seen that the conclusions here reached are very nearly in accord with those of Dr. John Blake White, whose writings should be consulted for further details.

CLINICAL MEMORANDA.

THREE UNUSUAL FRACTURES.

By LIEUT. A. E. BRADLEY, M.D.,
ASST. SURGEON U. S. A., FORT SULLY, S. D.

[Published by authority of the Surgeon-General.]

Case I.—C. W. M., on May 10, 1890, while intoxicated, fell down the "bluffs" at Bellevue Rifle Range, and sustained a severe punctured wound of the left side of the face from the stump of a small shrub which had been cut with an axe, leaving a sharp point. The stick entered below the inferior maxilla and passed upward through the cheek far enough to injure the facial nerve and to cause facial paralysis, which persisted for several days. This wound healed under antisepsis by first intention.

An injury of a more serious nature, however, was discovered—a fracture of the left ilium. A large ecchymosis over this region called attention to what was shown on examination to be a transverse fracture. The fragment could be grasped by the hand and crepitus easily produced. Shortly after the injury was received the patient passed bloody urine, but blood was noticed only at this time. The fracture was treated by means of broad bandages and adhesive strips, and recovery was uneventful. In about four weeks the man was restored to duty.

Case II.—F. J., while on duty on August 16, 1890, at the rifle range already referred to, was injured by a fall from a government wagon, and was attended by me immediately afterward. Inspection disclosed a fracture of the head of the tibia extending obliquely downward and outward, making a wedge-shaped fragment, base up, and the line of fracture extending into the joint.

There was also a partial luxation of the head of the fibula; the ligaments were so torn that the bone could be readily displaced by manipulation, though no marked deformity existed. The tibial fragment could be moved to and fro under the hand, producing distinct crepitus.

The leg was placed on a posterior splint, and the patient was at once transferred to the Post Hospital, Fort Omaha. On his arrival there, as was afterward learned, the dressing was inspected, and, as it seemed to be properly adjusted, it was not disturbed, and the patient was placed in bed. I did not see him again until some time afterward, when he was noticed on crutches one day in the ward. I observed that the leg seemed to be thrown too far out, but this peculiarity attracted no particular attention, as it was thought that it was probably brought about by a voluntary effort of the patient.

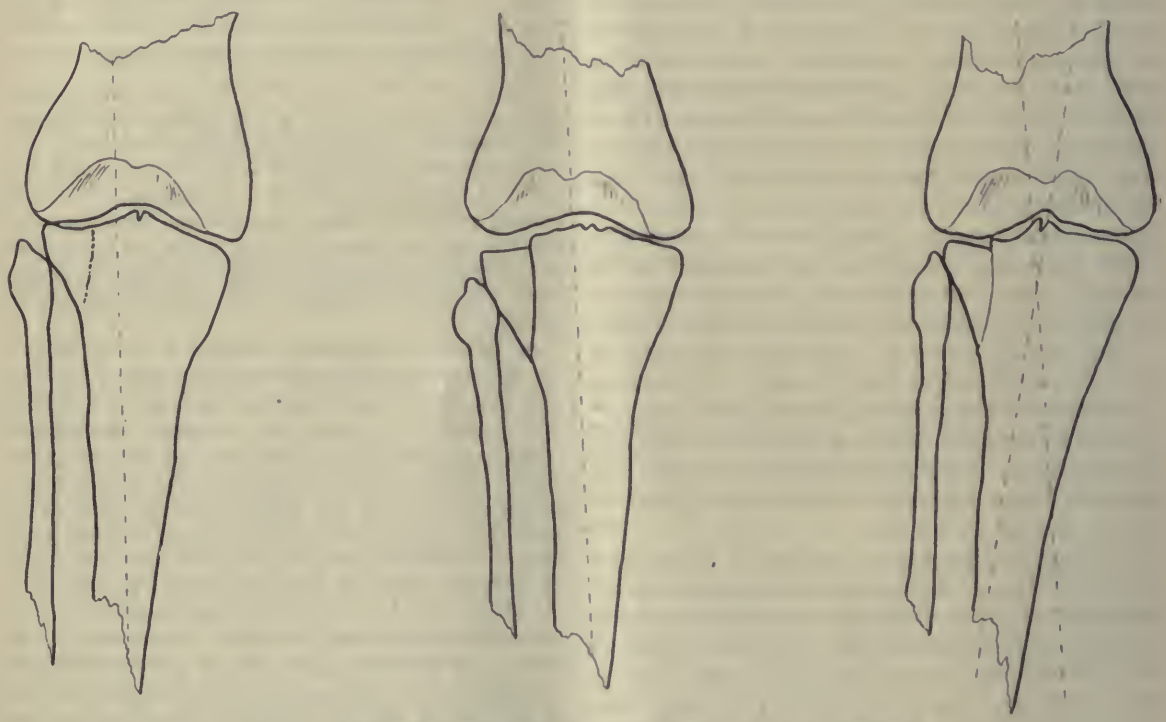
It was later evident that deformity existed, and that the

general appearance of the leg was that of "knock-knee." This was easily explained by bearing in mind the peculiar form of the fracture, and noting that a slipping up or down of the fragment must necessarily have changed the axis of the leg, if it became fixed and united out of proper position. The fragment had slipped down, and had united while thus displaced; for the condyle of the femur to oppose this portion of the tibia, it was necessary that the leg be thrown outward, thus simulating "knock-knee." (See Figs. 1, 2, and 3.)

The possibility of such a result, or one identical in its effects, has long been recognized, and warned against by surgeons, in fractures involving the condyles of the humerus, and extending into the elbow-joint. One of the main points to be remembered in treating a fracture upper third, resulting in knock-knee to the extent of requiring the soldier to walk in an awkward manner; there is weakness of the leg, and a limp at a faster gait than a walk. He has been under observation for six months, during which time no change has been noticed in the disability."

In view of the results, it seems to me that the dressing in such cases should be a lateral splint on the side opposite the fracture, together with the posterior splint; possibly an adhesive strip, passing from below upward, would aid the keeping of the fragment in proper position. Such a dressing accurately applied should give satisfactory results. That this fracture is rare is evidenced by the fact that few writers have described it and the possible resulting deformity.

FIG. 1. FIG. 2. FIG. 3.



Fracture of the tibia of the right leg, anterior aspect, the patella removed.

of the internal condyle is not to permit the fragment to slip up, and there unite, interfering with or destroying what has been termed the "carrying function" of the arm. Stimson speaks of the caution to be exercised in order to prevent lateral displacement in these cases of oblique fracture into the knee-joint, lest a permanent genu valgum or genu varus result. The result in this case shows the importance of keeping this possibility in mind. Though such fractures are rare, it is important that they be understood, and that care be taken to insure a satisfactory result.

In this case the man was finally returned to his station, Fort Douglas, Utah, with firm union; but the displacement was such that it was deemed for the good of the service to discharge him on surgeon's certificate of disability. Remarks made by the surgeon who recommended his discharge at the time are as follows: "Discharge is recommended for fracture of the left tibia,

CASE III.—G. W. M., on April 28, 1892, while jumping in the gymnasium at Columbus Barracks, Ohio, fell and struck the point of his elbow directly on the floor with considerable violence. I saw him immediately, and examination disclosed a transverse fracture at the middle of the olecranon process, the fragment being separated an inch or more when the forearm was flexed, but easily placed in proper position. The man stated that before his enlistment he had been pitcher of a base-ball team, and that he had been unable to completely extend this arm, the right, for some time. His statement was borne out by the failure of manipulation to produce full extension; it was also noted, when a forced effort was made to fully extend the arm, that there was produced an overriding, or better described, perhaps, as a tilting, of the separated fragment.

The parts seemed to be best in apposition when the

forearm was slightly flexed, and it was, therefore, dressed thus, using anterior and posterior felt splints. A broad strip of adhesive plaster was first passed from above the fragment down in front of the forearm, to assist in maintaining the fragment in position. The man complained of no pain, and the swelling which followed the injury was very slight. Passive motion was commenced on May 10th, but on the 12th the case passed from observation, when he left Columbus Barracks to return to his regular station.

I am indebted to Major W. E. Waters, Surgeon U. S. Army, for further notes on the case, concerning which he writes as follows:

"Passive motion was commenced while in your hands, which was continued regularly in the hospital until he went on furlough, June 11th. The patient returned July 11th, with a partial firm ankylosis [?] rendering extension of the arm any further than the position in which it was treated impossible. He represents that while he was away the arm was manipulated by a doctor, with a view to restoration of motion, etc. He has perfect complete flexion, and extension until it reaches the position you left it in, and there it suddenly stops. There is ligamentous union with separation of the fragments about one-fourth of an inch when extended, and nearly one-half inch when flexed. I do not believe I can improve the condition of the arm, particularly as the man, I think, will not coöperate; I have recommended his discharge."

This man's arm, as previously noted, could not be completely extended before the injury, and immediately after the injury forced extension would not bring the forearm straight. The arm was dressed, however, as nearly extended as the previous condition of things would permit, the amount of flexion being not more than ten degrees. It was in this position, then, that it was fixed.

I doubt if Major Waters was aware of the previous inability to completely extend the forearm, and perhaps the imperfect extension to which he alludes may be no more than that which was normally present, as a result of the man's former occupation.

Reviewing this case, and the literature of like cases, it seems that the result, while not wholly satisfactory, was as good as is attained in the majority of these cases. It is still a disputed point as to how such fractures should be treated.

Much has been said as to the position in which to fix the arm; many surgeons advise complete extension, but the majority of modern authorities seem to prefer slight flexion.

Hooks for holding the fragments in apposition have been advocated by some, and operations have been performed with success, suturing the fragments with wire, osseous union following; it is claimed by the advocates of this latter method that antiseptic precautions make the operation devoid of danger. It seems, however, that by a careful adaptation of some simple apparatus the good result usually obtained would render the substitution of more severe measures unjustifiable.

The Charlotte Medical Journal, without malice or evil intent, says of the *New York Polyclinic*, that "the Professors of the Polyclinic constitute its *corpse* of editors."

ANGIO-NEUROTIC EDEMA: A REPORT OF THREE CASES SHOWING SOME INTERESTING MANIFESTATIONS.

By THOMAS G. ASHTON, M.D.,
DEMONSTRATOR OF CLINICAL MEDICINE IN JEFFERSON MEDICAL COLLEGE.

That our knowledge of angio-neurotic edema is as yet in the early stages of its development is my reason for reporting the following typical cases of the affection, as it is only by the grouping together of different examples of a disease, and the critical study and comparison of its causes and manifestations, that an accurate idea of its nature can be arrived at.

Case I.—W. E., aged fourteen, a school-boy, whose previous history includes the ordinary diseases of childhood and is otherwise negative, with the exception that at the age of two he suffered from an attack of infantile paralysis involving the extremities of the left side.

When seen for the first time, about the middle of November, 1892, except for the palsy and atrophy of the muscles of the left leg and arm, he bore every evidence of being in the best of health otherwise than as relating to the condition about to be described.

Upon the previous day he had a fall, striking upon the tissues in the neighborhood of the right eye; the resulting swelling was only slight, the contusion being moderate in degree. Upon the evening of the following day there appeared with great suddenness a swelling of the tissues surrounding the right eye and nose. This was unattended by any subjective phenomena other than a sense of awkwardness of the parts. The swelling was of extraordinary pallor, translucent in appearance, and pitted slightly upon pressure; the pitting, however, being very evanescent. This condition lasted until the morning of the fifth day, when the whole process suddenly terminated.

Upon the evening of the same day as that upon which the lesion disappeared from the region of the right eye, and without any apparent cause, the same condition suddenly developed in the tissues surrounding the left eye. This second attack was attended with the same manifestations as characterized the occurrence of the affection of the other eye. It continued in the neighborhood of the left eye for two days, and then suddenly disappeared.

There were no manifestations of digestive derangement suggesting an involvement of the gastric mucous membrane, and examinations of the urine gave negative results.

Case II.—Miss DeH., aged eighteen, is the subject of a marked tuberculous diathesis, and for several years before the development of symptoms of angio-neurotic edema had been under treatment for tuberculosis of the cervical lymphatic glands, some of which required surgical interference.

In July of 1892 the patient entered a street-car in an overheated condition, and seated herself beside an open window. She felt the draught and remarked a sudden chilling of the surface of the face. Almost coincidently with this the face began to swell, with an accompanying sensation of great itching and burning, or, as she herself expressed it, "scalding." The swelling was of enormous proportions, involving the entire right side of the face, and completely closing the right eye; it was

pale-pink in color, resistant to the touch, and pitted scarcely at all upon pressure. When seen the next day the patient presented no evidence whatever of the affection, the lesions having disappeared during the night.

A second attack occurred three weeks later, in which the tissues of both sides of the face were involved. This attack was so severe that both eyes were completely closed, obliging the patient to remain confined to the house. A sudden chilling of the surface of the face while sitting at an open window, the patient at the time being in a state of perspiration, was the cause of this attack; after continuing for three days the phenomena disappeared.

The third attack occurred a few weeks subsequently to the second, and, as previously, followed sudden cooling of the surface. It involved the right side of the face, and after lasting for two days the lesion migrated to the conjunctiva of the right eye, which swelled with great rapidity. The entire conjunctiva of the eye was affected, so that vision was almost completely obscured, and the appearance of the eye resembled that of a large blister, except that the color was of a bright red, owing to the suffusion of the vessels. The swelling was so great that the patient was unable to approximate the eyelids, and was attended with great suffering. After about twenty minutes of these severe symptoms the swelling of the conjunctiva suddenly departed, leaving the eye injected and sensitive. The lesion upon the face continued for three days longer.

The patient has had two attacks of the disease since, both upon the face, the last occurring about six weeks previously to the present writing. During each of the attacks the patient suffered from digestive derangement, as manifested by nausea, anorexia, constipation, which disappeared with the departure of the lesion.

CASE III.—M. A., aged twenty, female, with negative history. During the month of January, 1893, after exposure to a cold wind, a sudden swelling appeared in the parts around the right eye. The swelling was attended by a sensation of considerable burning, and was not influenced by pressure. In about three hours after the appearance of the lesion upon the face a copious eruption of herpes occurred upon the right side of the scalp. The edema rapidly subsided after a duration of three days, but the eruption of herpes continued for four days longer. There has been no recurrence of the affection.

Among the interesting points in the histories of these cases are the causes exciting the attacks. It is stated that the two most frequent exciting causes of the attacks are traumatism and exposure to cold, either exposure to a low temperature or sudden cooling of the surface after being overheated. In Case I the exciting cause of the first attack was clearly the traumatism; in Cases II and III, sudden chilling of the surface undoubtedly bore a causative relation to the occurrence of the seizures.

The most remarkable fact in regard to Case II was the involvement of the conjunctiva, and as regards this phenomenon I believe the case to be unique, as, after an extended search through the literature upon the subject, I have been unable to find a record of the occurrence of the lesion upon this mucous membrane.

It is somewhat singular that in Case III the occurrence of the herpes upon the scalp should have been coincident with the lesion of angio-neurotic edema of the face of the same side. Though there may have been some connection between the two conditions, I am disposed to look upon their simultaneous occurrence as being rather a coincidence, as the patient several years years previously suffered from a similar attack of herpes of the scalp.

In other respects the foregoing cases do not differ from many of those already reported. A history of heredity could not be established in any of them, although in many instances heredity is shown by Osler and others to be an important predisposing factor.

The typical appearance of the lesion—in Case I, its extreme pallor, in the others its peculiar lusterless rose-red—corresponds exactly with the description of the lesion as given by Collins, of New York, in a recent article upon the subject. The suddenness with which the disease manifested itself, and the peculiar sensation of stiffness and awkwardness in one instance, and that of itching and scalding during the development of the lesion in the other two, make, together with its color and the suddenness of its departure, the clinical picture of the disease almost complete.

NEW DEVICE.

A MODIFICATION OF GOTTSTEIN'S CURETTE.

BY G. HUDSON MAKUEN, M.D.,
OF PHILADELPHIA.

A SHORT time ago one of our medical journals published a new (?) method of removing foreign bodies from the ear, and upon investigation it was found that this same method had been published seventeen times before, and had been practised as far back as the time of Solomon.

This fact, and similar ones, make one hestitate to claim priority, and doubt whether there really is anything new under the sun.

In September, 1892, there was described in the *New York Medical Record* a modification of the cutting portion of the Gottstein curette. While this number of the journal was yet in process of printing my instrument was in the hands of the maker, undergoing the very modification therein described, and upon looking the matter up, it was found that Dr. Huguet, of Paris, described the same heart-shaped modification of the curette in November, 1891.

This instrument has become very popular, and deservedly so, among rhino-pharyngeal surgeons, and I venture to describe a little change in the shape of the distal end of the handle which I think greatly enhances its convenience and usefulness.

The accompanying cuts show the original and the modified handle, and incidentally the original and modified blade.

The handle in Fig. 1 is of metal, smooth and pointed, with nothing to prevent it slipping in the hand during the upward pressure required, and thus allowing the blade to glide over a portion of the tissue to be removed, and with nothing to prevent its turning in the hand, and thus doing serious injury to the orifices of the Eustachian tubes.

The modified handle, shown in Fig. 2, is made of hard rubber, with a fourchette at the end which fits snugly into the fourchette between the thumb and index finger, enabling the operator to control the instrument

Fig. 1.

Fig. 2.

perfectly—an important thing in any operation, but doubly so here, where the cutting portion is out of the line of vision and in close proximity to sensitive and delicate structures.

MEDICAL PROGRESS.

Cholecystitis Simulating Intestinal Obstruction.—Lane (*Lancet*, No. 3626, p. 411) has reported the case of a man, fifty-four years old, who, while drinking a glass of lemonade at the conclusion of a rather hearty supper, was seized with sudden and severe pain in the abdomen. Eight years and three years previously there had been similar attacks. On neither occasion was there jaundice or pain in the region of the liver or gall-bladder. The pain continued for some time, and was accompanied by frequent vomiting. The abdomen became distended, distention and pain being the more decided upon the right side. The bowels were constipated. After the lapse of a few days the man became quite prostrate, with a small, rapid pulse and a distended, painful, and tender abdomen, hardness and fulness being most distinct in the right hypochondrium. The cecum and the small intestine were greatly distended, but there was no sign of distention of the colon to the left of the middle line. It was concluded that there was some obstruction of the large intestine immediately beyond the hepatic flexure. On opening the peritoneal cavity in this situation a thick layer of firm lymph was found covering the edge of the liver and extending down over the adjacent transverse colon. Beyond this point the colon was empty, while the ascending colon was much distended. On removing the lymph from the transverse colon the duodenum was found immediately beneath and covered with a similar layer of inflammatory material. In relation with both duodenum and transverse colon, and likewise covered with a deposit of lymph, lay the tensely distended, livid, and evidently acutely inflamed gall-bladder. The lymph was removed. After the thick muco-purulent contents of the gall-bladder were removed, the opening was enlarged and its margins sutured to the peritoneum, and a drainage-tube introduced and fixed in position. No stone was found, and the condition of the patient forbade prolonged search. There were considerable restlessness and delirium for some time after the operation. The boweis acted freely within twelve hours. The man gradually progressed to complete recovery, though for a considerable time mucus continued to escape from the fistula that remained.

Excision of the Lower Jaw for Malignant Disease.—Nancrede (*Annals of Surgery*, xvii, 3, p. 295) has reported the case of a man, thirty-three years old, who for eight months had observed a small, bony growth, as large as a small pea, on the portion of the inferior border of the lower jaw related to the first true molar tooth. The extraction of two teeth was followed by the development of a fungating mass, springing from the alveoli of these teeth, with rapid increase in size of the jaw from the angle almost to the symphysis. A free, offensive discharge took place, and the man failed greatly in strength. The right ramus, with the corresponding portion of the body of the jaw, extending somewhat to the left of the symphysis, was removed. In the course of six or seven weeks the growth recurred, and the remaining portion of the jaw was exarticulated and the floor of the mouth freely dissected away. In the course of two months recurrence had again taken place. It being feared that both the superficial and the deep carotid arteries were involved in the growth, a ligature was passed around the common carotid above the omo-hyoid muscle, but not tightened. After two hours of tedious dissection, the growth, which was attached to the sheath of the deep vessels for a distance of two inches, was removed. It was not known whether or not the external carotid artery was ligated, but it was believed to have been tied in the wound. Recovery took place without a bad symptom.

It is recommended that in cases of primary malignant neoplasm of the lower jaw, at least half of the bone, including the ramus, should be removed, together, if possible, with every vestige of the periosteum. As experience has taught that in cases of sarcoma of the long bones amputation in continuity rarely succeeds, total excision of the lower jaw is to be preferred when the disease extends along the body much anteriorly to the angle. On account of the ease and safety afforded it is advisable to divide the lower lip in the median line; the resultant cicatrix gives rise to little or no deformity. There should be neither hesitation nor delay in the removal of recurrent growths, as these almost always originate from fragments of periosteum left behind or in the attachments of the maxillary muscles.

The Treatment of Severe Club foot.—WALSHAM (*British Medical Journal*, No. 1677, p. 339) maintains that, in the treatment of severe cases of club-foot in the infant, the aim should be to act on the bones rather than merely to stretch or divide the soft structures on the inner side of the foot. To accomplish this object the varus defect must not be too quickly overcome. When the varus is cured, the foot should, if possible, be carried at once, after division of the tendo Achillis, beyond a right angle with the leg, there being no danger of non-union of the tendon; if the foot cannot be brought up to or beyond a right angle, the failure is not, as a rule, dependent upon contraction of the posterior ligaments or upon partial tilting of the astragalus out of its socket, but upon a downward deflection of the neck of the astragalus. Attempts to overcome this deflection are best directed to the bone rather than to division of the posterior ligaments or soft structures of the sole of the foot. In exceptional cases, even in the infant, it may be prognosticated from the first that neither the varus nor the equinus will be thoroughly overcome without an operation upon the bone. For such cases, after all gentler means have been faithfully tried, and for confirmed cases in older children, astragalectomy, with, if necessary, the removal of a further portion or portions of the tarsal bones, is on the whole the best operation.

The Dangers of Rubber taken into the Mouth.—In a contribution from the Department of Hygiene at the Imperial University of Moscow, ALEXANDER BULOWSKY (*Arch. f. Hygiene*, vol. xv, No. 2) presents some facts in reference to the possible injurious qualities of rubber articles, such as teething rings and nipples. His important conclusions are as follows:

Rubber articles that float in water and are elastic and soft are harmless.

Black rubber dolls that are colored throughout the mass, and the material of which sinks in water, contain lead and are dangerous.

Red and brown rubbers contain antimonic sulphid, and when colored throughout the mass are not dangerous, as the antimony does not dissolve in the saliva or in milk.

Gray rubber contains zinc oxid, and is dangerous in any articles likely to be put into the mouth.

Rubber articles colored on the surface only are unsafe.

THERAPEUTIC NOTES.

Epithelioma of the Tongue Cured by Electrolysis.—DRAISPUL (*The Journal of Laryngology, etc.*, vii, 2, p. 66) has reported the case of a man, twenty-five years old, who presented evidences of pulmonary tuberculosis and an effusion of fluid into the left pleural cavity and an ulcer upon the right margin of the tongue. The base of the ulcer was somewhat excavated and covered with a grayish deposit; the margins were infiltrated and undermined. Several glands on the right side of the neck were enlarged. As between the galvano-cautery and electrolysis, the latter was preferred on account of the painlessness of its application, the slight reaction to which it gives rise, and the greater permanency of the therapeutic result. Microscopic examination of sections of a piece of tissue removed disclosed the histologic appearances of an epithelioma. The destruction was accomplished by means of a steel needle connected with the negative pole, a current of ten milliampères being employed for ten minutes. The full destruction was accomplished in six sittings at intervals of three or four days. Two small nodules that formed upon the tongue were treated with the cautery, but ulceration took place at the site of cauterization, and electrolysis also proved successful in the removal of this.

Terpene Hydrate for Bronchial Catarrh.—MURRELL (*British Medical Journal*, No. 1679, p. 457) emphasizes the value of terpene hydrate in the treatment of affections of the bronchial and nasal mucous membrane. The drug is prepared by treating oil of turpentine with nitric acid and alcohol. It is a solid and has somewhat the appearance of chloral hydrate. It has a faint odor resembling that of pure terebene. It is practically insoluble in water, but it may be prescribed in the form of an elixir, five grains being added to a half-ounce made up with simple elixir and flavored with tincture of Virginian prune and syrup of tar or with aqua laurocerasi. For those that cannot take sugar the elixir may be made with saccharin. Terpene not only relieves cough and lessens bronchial secretion, but it also is a distinct diuretic, and has been used with benefit in neuralgia.

For Malaria—COHEN (*The Philadelphia Polyclinic*, ii, p. 66) reports remarkable therapeutic results from the employment of the double hydrochlorate of quinine and urea in the treatment of malarial fever. Ten or fifteen grains of the drug, dissolved in from twenty to thirty minims of boiled water, are injected subcutaneously. Unless the paroxysms recur with greater frequency, but three injections are given in the first seven days and two during the second. Subsequently, arsenic, in one form or another, is given for two or three weeks. In making the injections the needle should be inserted deeply; the syringe should be entirely empty before it is withdrawn, and the point of puncture should be painted with tincture of iodine.

A New Method of Administering Medicines.—CONDAMIN (*Lyon Médical*, t. lxxii, No. 11, p. 363) describes a mode of administering medicines that he has for six years employed with satisfactory results. It is necessary that the medicament be sufficiently soluble in water in order that the requisite dose may not exceed the volume of a fluid-dram. By means of a rubber catheter or a suitable canula provided with an olivary extremity, the fluid is introduced into the rectum. Absorption is not quite as rapid as when the administration is hypodermatic, but the physiologic effect persists longer, and there is no pain and no risk of abscess-formation; and the rectum is quite tolerant of the procedure.

A Diuretic and Heart Tonic.—

℞.—Juniperi	℥xij.
Potass. acetat.	℥viij.
Pulv. digitalis	f℥ij.
Pulv. scillæ	f℥j.
Vini albi	Oviij.
Spt. vini rectificat. . . .	Oj.—M

S.—A dessertspoonful at a dose.

The Practitioner.

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OUR PREPARATIONS FOR CHOLERA.

CONSCIENCE-SMITTEN with the knowledge that as cities and as a nation we were in the most wretched state of ill-preparedness for an epidemic of cholera should it develop in our midst, we frantically demanded of our General Government that it should keep the contagion away from our shores. We have given legislative authority to establish a quarantine-service, the means, methods, and machinery of which we imagined could be called into effective action in the space of a month or two. Having done this, the people slipped back into a delusional dream of safety, leaving our Boards of Health to drone on in customary do-nothingism, allowing our streets and alleys to fill with filth, and continuing to drink our beloved diluted sewage.

Out of this belief in safety, Medicine now calls the people, and warns that there must be a municipal and national house-cleaning; that, despite all quarantine, the possible epidemic is probable, and that at last the only safety lies in internal health and sanitation—in an ability to deal with cases of cholera wherever and whenever they arise within the country. This ability cannot exist without a purified water-supply, clean cities, and an everywhere-existing machinery of local medical policing, that, to speak plainly, nowhere exists.

Where the medical warning was most clearly needed, there fortunately it was most clearly made, and there is now a clumsy vigor that, in its opera-bouffe character, makes us blush scarlet for our civilization. The spectacle now presented in New York and in the Croton watershed—the DALY raid—will long remain in future annals as one past wonder and belief. In a spasm of fright and awkwardness the city is to pay millions of dollars, without at all surely and completely securing what she seeks and needs. It is commonly agreed that this clownish and brutal method of purifying the Croton water-supply will not certainly purify it, and will have no result in limiting its function as a disseminator of cholera-germs if they come amongst us.

The significance of the farce lies in the proof it gives that we are at last awakening to some comprehension of the awful condition of our national unhygiene. Disease, with the instinct of self-preservation and the fear of death, may serve to awaken in our people a knowledge of the need of cleanliness, of the interdependence of each upon all. What we would not do for decency's sake we are spurred to do for life's sake; what we would not do willingly we are forced to do by the power of law, and for our own health. It was a remarkable thing, one repeatedly noted in the Croton towns, that the inhabitants actually laughed at the idea that they should care to keep their filth out of the drinking-water of a million people living a few miles down stream.

The energy of the rest of the American people seems to have expended itself in a lazy confidence in the exclusion-policy given over to the *deus ex machina* of the National quarantine-service, and to an amused news-mongering about New York's medico-political comic-opera plight. In Philadelphia our purlieus, back-alleys, and slums, are certainly not in good condition, and we are resignedly happy not only to drink the sewage-water of several hundred thousand people; but of the water within a few miles of the city, and, even within the city limits, no effort is made to stop a further contamination, suspected of being quite as bad as necessary. Our local medical societies and Board of Health should secure an exhaustive examination of the water-supply of Philadelphia, similar to that undertaken by the New York Academy of Medicine.

It is not different in most other cities. In Chicago, spurred by the fact that the entire success of the Exposition depends upon the sanitary condition of the city, the energetic work of prepa-

ration has, as shown in another column, been able to reduce the death-rate to a great and praiseworthy degree. This proves what may be done with interest and determination. The same reduction in other cities is perfectly possible, and is demanded by every consideration of humanity and prudence. What earthly need is there that the death rate of New York should be 25 per cent. higher than that of Chicago? Drainage, etc., considered, the reverse should be the case. The fact proves that about 10,000 people die unnecessarily—are, in fact, murdered in New York every year.

Out of this death-inviting indifference it is the duty of the medical profession, through every one of its members, to arouse the people. In a simple commercial light, should a single case of cholera occur in Chicago during this year, it would be a national financial calamity, in comparison with which any expense of prophylaxis would be trivial. The local Boards of Health should everywhere be spurred to action, isolating-hospitals should be made ready, and the mechanisms, financial, official, and medical, for every contingency prepared.

At our ports of entry it is especially necessary that the preparations be most clear and effective. Medical societies, Boards of Health, and citizens' committees should at once unite and examine into the questions of water-supply, sewage-disposal, street and slum cleansing, and all such matters. What officials are there, what machinery exists, and what public money is at disposal, for the discovery, segregation, and care of one, of a hundred, or of a thousand cases of cholera, should they suddenly appear?

But it is not only our seaport cities that need to be guarded. It is already plain that, fearful of our more stringent quarantine-regulations, immigration is being deflected to Canadian ports, and that, if negligent of the Canadian frontier, infection may slip into our homes by this "back door" whilst we are effectually guarding the front.

Inland cities and towns should also be made ready. Wherever an immigrant's trunk is unpacked there may be sown the seeds of disease and calamity.

We should also note well that the probable source of much of our immigration-material is to be profoundly suspected. The tyranny of Russia has reduced her people to a destitution wherein they are an easy prey to disease, and it is believed that she is concealing much of the truth as to the cholera and her internal condition. The cholera has not been suppressed in many parts of Russia despite the intense cold and the presence of snow. According to a recent report of the *Regierungs-Anzeiger*, the disease prevails in 14 Russian "governments." From December 28, 1892, to January 16, 1893, there were in Podalia 586 cases and 196 deaths; in Kiew from December 28, 1892, to January 24, 1893, 144 cases and 44 deaths. When, with warmer weather the conditions of travel and of germ-development become more favorable, all the possible rigors of quarantine can hardly prevent sporadic cases, at least, arising within our borders, and every means of meeting the danger should be well provided for in advance. We are, indeed, forewarned, but we are far from forearmed. The care of the public health must be taken out of the hands of ward politicians and put into the keeping of men who are fitted by study, by experience, and by morality to solve the tremendous problems of the prevention and cure of disease. The mechanisms and methods of such solutions must be permanent; they cannot be created in a few days by a panic-stricken populace or by bouffe politicans, but they are the products only of many years of virile and conscientious intelligence. When the present danger has passed, the permanent danger of the future will then be present.

THE SANITARY CONDITION OF CHICAGO.

Two years ago Chicago decided that one of her chief duties as regards the World's Fair was to be able to offer a clean healthy abode to the great number of strangers who anticipated visiting her. At that time her annual death-rate was not particularly high, being 22.7 for the year 1891, but there was a moderate epidemic of typhoid fever, which was sufficient to create considerable discussion in the newspapers and to cause some dire forebodings.

Careful inspection showed that the difficulty was with the lake water, which formed the greater part of the drinking-water in the city. The crib from which the main supply came was two miles from shore, but a certain amount of the less pure surface-water was admitted. Measures were at once begun to rectify this evil, and pending the completion of these measures, the public was taught, through the press, the advisability of purifying the drinking-water by sterilizing with heat, or by filtering. The old crib was quickly repaired, and the completion of the new tunnel was hastened. The new tunnel is nearly

two miles from the older one, and extends four miles into the lake.

At the same time other improvements have been made in the sewage system. The Chicago River has been made to flow more constantly opposite to its normal direction into the lake, and it carries with it much of the city sewage into the Illinois River. Although at certain times, especially when the rapidly melting ice floods the river in early spring, the river does flow into the lake, and although a certain amount of sewage is emptied into the lake at other points, still the great distance of the source of supply and the exclusion of the surface-water greatly lessen the danger, if, for the present at least, they do not reduce it to a minimum.

These changes, as well as other sanitary measures taken by the Health Department, have had their effect. Thanks to the kindness of the Bureau of Health, we are able to give a few statistics, although the annual report is not yet printed. The mortality for the year 1892 in Chicago, reckoning from the population given by the School Census of last May, was only 18.2 in a thousand. This is 20 per cent. less than that of the year 1891, and compares favorably with the mortality of any of the large cities of the world. It is considerably below that of the largest American cities. For example: In Philadelphia it was 21.1; in Brooklyn, 21.9; in Baltimore, 23.2; in Boston, 23.9; and in New York it was 24.0.

In some of our other cities it was even higher. To show that this favorable rate is still keeping up, it may be added that a comparison of the death-rates of New York and Chicago for the week ending March 18th shows 30.6 for New York and 18.4 for Chicago.

These figures are alone sufficient to prove that on the ground of general sanitary conditions Chicago is in a good condition to receive and care for visitors to the Fair.

Besides the general healthiness of the place there is another consideration. In any large concourse of people from all quarters of the globe, there is always the chance of an epidemic. The three diseases most likely to cause such a disturbance are typhoid fever, smallpox, and cholera.

There need be little anxiety felt regarding typhoid fever, for it seems to be well under control at the present time. It was not until last November that the new four-mile tunnel was used, and its effect is very apparent. We quote the number of deaths from typhoid for the past six months and for the corresponding months of the previous year:

	1891.	1892.		1892.	1893.
September,	190	138	January,	311	41
October,	171	92	February	187	30
November,	150	67			
December,	186	47			

The drinking-water has been analyzed repeatedly by Prof. W. S. Haines, and he reports the most gratifying improvement, especially since the opening of the new tunnel. There has been a great diminution, not only of the albuminous ammoniates and the chlorids, but also in the number of microbes to the cubic centimeter. In spite of the purity of the drinking-water the public is still quite generally sterilizing it, or using Pasteur filters; and the hotels and restaurants are almost all adopting this plan.

In the World's Fair grounds, on every corner, even to-day, are supplies of free sterilized water; but in addition to the general water-supply, the Waukesha spring water has been introduced into the grounds through ninety miles of pipes. The Waukesha supply consists of three springs, with a daily outflow of two million gallons, and the examination shows that it possesses great purity. In fact, the number of microbes to the cubic centimeter is less than ten, which is a very high grade of purity. This water will be given free in many of the buildings, while in other places the moderate charge of one cent a glass will be made for it.

The systematic thoroughness of the Health Department of the City will, it is believed, be a sufficient proof against a smallpox epidemic. During the year 1892 there were only five smallpox cases, with one death. It is the custom of the Department to examine any doubtful case immediately, and if found to be a genuine case of smallpox, the instant removal of the case to the pest-house is followed by the vaccination of all the people in the vicinity to the number of several hundred. In this way the disease is prevented from spreading; and for a long time there have not been two cases in the same vicinity. This, of course, is entirely apart from the compulsory vaccination of school-children, which is also practised.

Probably everybody has silently asked himself what would become of the Fair if the cholera invaded Chicago this summer; and it is believed that the question will never be answered by facts. The details of Chicago's individual work in guarding against cholera must of course depend upon the

thoroughness of the work of the quarantine-stations on the coast, and upon the general trend of the disease itself. At present Chicago has contented herself with perfecting the general sanitary conditions, and with the maintenance of the same rules of inspection and quarantine which were so effective last year. But she holds herself in readiness to supplement any laxity at the coast with still more stringent local measures.

It is not denied that danger exists, and that sewage is to some extent flowing into the lake. The greater dilution required for contamination of the water-supply through the four-mile tunnel does not guarantee asepticity, and no relapse of vigilance must be allowed.

It is, of course, a great safeguard, locally considered, that, in addition to the coast-inspection, there are also other cities through which the immigrants must pass before arriving at Chicago, and whose inspection they must undergo; but, in spite of this, we are assured that the local inspection will be rigidly carried out.

It might be well to add that the Health Department has prepared, in case of necessity, for the isolation of a considerable number of patients by means of tents, which, with the flooring already complete, can, if needed, be erected at short notice, and will be sufficient until others can be obtained.

EDITORIAL COMMENTS.

The Proposed Constitution and By-laws of the American Medical Association.—As offered to its readers in the *Journal of the American Medical Association* of April 1st, we find some difficulty in understanding the publication. It is presented as an editorial, which it evidently is not; no explanation of the work is given; it is not signed by anybody; no distinction between constitution and by-laws is made; and, unless thoroughly acquainted with the Association's action in these matters, one could no more than guess that the document is the report of a committee (appointed in June, 1892) formulating and proposing to the Association a constitution and by-laws which are to be acted on at the next meeting of the Association. These matters should have been made clear.

Membership is limited to those who are members in good standing in the several affiliated State medical societies and who shall subscribe for the *Journal*. "All societies that reject the code of ethics of the American Medical Association, or intentionally violate or disregard any article of the same, are thereby and of their own choice debarred from membership." The code of ethics proposed is to be published later, and judgment of the committee's work must therefore be postponed until this important conclusion is made public.

"Allopathic Czar Parties."—A method of bringing about the medical millennium is advocated in a circular before us, and addressed: *Dear Devotee of Constitutional Liberty.* "Allopathic Czars," seems to be a tirade against regular or rational medicine, and is vouched for as being "uproariously funny," which is doubtless more true than the authors suspect. We cannot forbear quotation:

"The next page explains the origin and utility of 'Allopathic Czar Parties.' They are potent and popular educational entertainments—admirable first steps toward a Local Liberty League—leading to a Chautauqua-like course of studious reading. We appeal to you to send stamps for one or more copies of 'Allopathic Czars,' and invite a score of neighbors in to enjoy the fun. At the close, when everyone is in a rollicking good humor and full of enthusiasm, appoint another meeting and take a five or ten cent collection for our entire League Library; price only $1.00—less than cost.

"Hoping to hear favorably and frequently from you, we remain yours for Health, Humanity and Constitutional Liberty."

Where does the money come from to support this remarkable crusade?

"Friends of Medical Freedom."—In Ohio there is a bill pending in the Legislature, a very mild one, as may be supposed, which allows physicians, homeopaths, and eclectics representation in a proposed State Board of Medical Examiners. But it excludes clairvoyants, manupaths, wizard kings of pain, and all of this kidney from the practice of medicine—because such could hardly pass the necessary medical examination. But these have the powerful aid of the "National Constitutional Liberty League of Boston," of which Prof. J. Rodes Buchanan, M.D., and J. Winfield Scott stand as the official figureheads. Circulars and petitions are being lavishly sown over the State by the League, vilifying the "monstrous law" in proper vitriolic language. These circulars begin, *Dear Friend of Freedom*, and appeal to the friends of "medical liberty," and against the "maintenance of medical monopoly," all in the stirring tones of the spirit of '76. It will be remembered that last year the Ohio Legislature voted down a law similar to the one now proposed, with howls and cacchinations of derision, and then proceeded to vote the people's money for a trial of Keeleyism. It is said that railroads and printing-presses have been introduced into Ohio.

Concealment of Vital Statistics.—A bill is now before the New York State Legislature, the purport of which is to keep the health-department records secret. The reasons given for the measure is that many facts about births, deaths, etc., are of a private and personal nature (alcoholism, insanity, etc.); that in many marriages secrecy is desired; that blackmailing is fostered by the publication of some facts; that families suffer from proclamation of the existence of cases of contagious disease, and many other equally specious excuses. It is urged that data will be and are concealed because of publicity, and that, therefore, the existing statistics are erroneous. The importance of accurate statistics to the community is doubtless great, and because it is great the records should be public records and not private records. The vitiation of returns will surely be greater with secrecy, and in case of epidemics the suspicion of concealment

would work more injury than the frankest publicity. In spirit, the movement is as decidedly un-American as it is unscientific.

Professional Amenities.—The President of the Arkansas State Medical Society, in response to a request, gave a list of regular physicians in good standing in the Medical Society of Hot Springs. Some names were inadvertently omitted, which were subsequently supplied. One of the omitted ones, in ignorance of the voluntary reparation of the error, thereupon prints a letter wherein the *suaviter in modo* is somewhat less conspicuous than the *fortiter in re*. For example: "This specimen of physical and moral turpitude, this professional hybrid, with the soul of a snake, the heart of a jackal, the brains and propensities of an ass—this upstart president of the State Society . . . the worst charlatan in Hot Springs, in point of impudence and mendacity . . . for originality of method and black arts in misleading the public, would prove a Derby winner in the chamber of horrors of hell, etc." Is there something in the waters of Hot Springs that generates hot wrath and mixed metaphors, or is the climate at fault?

Physio-Medical Grammar and Therapeutics.—A recent number of the *Physio-Medical Journal* has a letter from a valued contributor describing his success with lobelia. It seems to be almost his sole reliance in all diseases. "The cases where this herb is not indicated down here is indeed few." He is so fond of it that he lovingly calls it "old rooter." A father wished "the gums of his nursing child incised in order to let them through easier." The lobelia emetic was given to the mother instead, but upon her it had no effect, but straightway the child "ejected a large round worm with some other debris." "It is needless to say to a physio-medicalist that both mother and child recovered rapidly." In a case of strangulated hernia the infusion of "old rooter" was equally successful. On the second day "I seen the flush of the face was not so purple." "In parturition, in cramp-colic, etc., it also done the work" perfectly. These, editor and contributor, are the men that hate "Allopathic Czars" and control medical legislation!

Medical Legislation in Pennsylvania.—We may feel a pang of sincere regret that, in the enlightened Commonwealth of Pennsylvania, it has seemed necessary to believe that there may be more than one kind of *physician*—in a word, that a true physician can be either "old school," "new school," "no school," allopathic, homeopathic, isopathic, eclectic, or Thomsonian. We must concede, however, that notwithstanding the perpetuation of this delusion, it is nevertheless a great advance to have placed under control of the State the authority for granting the privilege of engaging in medical practice. We, therefore, have much satisfaction in recording the fact that on Tuesday, April 4th, there was finally passed by the Legislature of the State of Pennsylvania a bill establishing a Medical Council and three State Boards of Medical Examiners. The members of the boards are to be appointed by the Governor from certified lists of the members of the several medical societies, and each board will examine the candidates in its own "school."

Applicants must have studied medicine for at least four years. The work of the Boards of Examiners is to be supervised by a Medical Council, to consist of the Lieutenant-Governor, the Secretary of Internal Affairs, the Superintendent of the State Board of Health, together with the Presidents of the three Examining Boards.

Preliminary Qualifications Necessary.—The De Kalb County Medical Society of Alabama demands that no application for the examination of those desiring to practise medicine in the county shall be received without satisfactory evidence having been given that the applicant has preliminary qualifications, according to law. The animus of the resolution is against the proprietary medical colleges requiring no entrance examinations, or in which such examinations are shams, and which graduate ill-fitted men. Let every medical society in the country take such a firm stand.

Judges Also!—A correspondent writes us concerning a judge who is in the habit of remitting all fines against drunkards on condition that they will at once take the Keeley treatment. This strikes one as being neither good law nor good gospel. In preaching that "drunkenness is a disease," physicians are finding that there is a popular exegesis of the doctrine as vicious as the theory is untruthful. Even if the theory were admitted, there is a decidedly ethical aspect to the question: How was the "disease" produced? This aspect the Keeley-omaniac preachers and judges utterly forget.

"The Medical and Surgical Exhibit" of the Association, if the committee's recommendation is accepted, will not henceforth be "under the authority or recognition of the Association." This is certainly a move in the right direction, although it will doubtless not have the full effect aimed at.

CORRESPONDENCE.

DR. FREIRE'S YELLOW-FEVER INOCULATIONS.

To the Editor of The Medical News,

Sir: I have just read the letter of Dr. J. McFadden Gaston, published in The Medical News of March 25th (p. 335). I have fully exposed Dr. Freire's statistical methods in my *Report upon the Prevention of Yellow Fever by Inoculation*, published in 1888, and cannot occupy your valuable space with a reiteration of the facts that led me to the conclusion that Dr. Freire's inoculations have no prophylactic value. But I call your attention to the fact that in 1885 Dr. Freire practised 3051 "inoculations," and in 1886, 3473, while in 1891-92 the number, as given in Dr. Gaston's letter, was only 1000, and of these, but 818 were inoculated in the city of Rio. I infer, therefore, that the method is not gaining ground in the city where it originated, although the yellow fever mortality in this city was greater in 1891–92 than in any previous year since Dr. Freire commenced making his inoculations. In 1884 the mortality was 618; in 1885, 278; in 1886, 1397; while in 1891–92 we are told that it

was 4000. As only 818 inoculations were practised during this epidemic year, it is evident that the method is not gaining in popularity, and that the members of the medical profession in that city are not convinced of its utility.

In his latest published statistics Dr. Freire again includes all of his previous "vaccinations," and gives a total of 11,881, with a mortality of 0.5 per cent. One or two extracts from my published report will show the fallacy of these statistics. Referring to the year 1885, I say:

"Dr. Freire has omitted to state one very important fact with reference to vaccinations practised during the period included in this tabular statement. The date of the vaccinations is not given. Fortunately, I am able to supply this omission from his journal containing the names of the vaccinated, which he kindly placed in my hands during my stay in Rio. I find from this record that the inoculations were practised as follows:

"January	392
February	342
March	611
April	139
May	273
June	813
July	481

"Now, it is well known that June and July are months during which yellow fever does not prevail in Rio, and that, in fact, the month of May furnishes as a rule but few cases. But Dr. Freire has included in his list 1294 persons who were vaccinated during the healthy winter months of June and July, and who presumably were exposed during the preceding comparatively unhealthy months of January, February, March, and April. If these 1294 individuals were protected from an attack of yellow fever by the inoculation practised in June or July, what protected them from being attacked during the preceding epidemic season?"

Referring to the year 1886, I say: "Taking all of the vaccinated for the two years, and without making any allowance for the considerable number of persons who had, no doubt, left the city before the epidemic of 1886 occurred, Dr. Freire, with a total of 6524 vaccinated and a total of eight deaths, makes the proportion 1 per 1000. Reference to Dr. Freire's manuscript journals shows that of the total number vaccinated during the two years, 4465 were vaccinated prior to the epidemic of 1866—that is to say, before the 1st of January, 1886. How many of these left the city before the outbreak of the epidemic, how many were only temporarily in the city when vaccinated, how many died from other diseases, I cannot say; but it is a significant fact that, of the 3051 vaccinated prior to August, 1885, Dr. Freire has only one fatal case to report, while out of 460 vaccinated in January and February, 1886, he reports five deaths, a mortality of more than 1 per cent., which he gives as the general mortality among the non-vaccinated. This, however, is not apparent from Dr. Freire's own statement of the case, but is nevertheless true, as I shall proceed to show. In his report, which we have just given in full, he does not give the date of the vaccination of these individuals, but upon referring to his manuscript journal for 1888, I find that No. 3 of his list, José, son of José da Costa Vierra, was vaccinated February 12, 1886; No. 4, Paschaol Ruffino, on the 6th of February, 1886; No. 5, Henri Constance, on the 1st of January, 1886; No. 6, Fernando Argenteiro, on the 20th of February, 1886; and No. 7, Antonio Saraiva, on the 12th of February, 1886. The same manuscript record for 1886 shows that during these two months—January and February, 1886—the total number vaccinated by Dr. Freire was 460. That is to say, the mortality among those vaccinated during these two epidemic months was more than 1 per cent. On referring to the mortality lists of the city for the same two months, I find the total number of deaths to have been 369, which, in a total susceptible population of 160,000 (Dr. Freire's estimate), would give a mortality of 1 in 436." That is, the mortality among those vaccinated during those two months of epidemic prevalence of yellow fever was very much greater than among the non-vaccinated portion of the population.

Finally, I would say to Dr. Gaston, and to any others who still have confidence in Dr. Freire's protective inoculations, that I still have in my laboratory a pure culture of the micrococcus which he gave me as his *cryptococcus xanthogenicus*, at the time of my visit to Brazil, and that it is at the service of any reputable physician who may wish to test Dr. Freire's method of prophylaxis. Or, if there is any doubt as to this being the microörganism used by him in his inoculations, I would suggest to Dr. Gaston that he ask his friend Freire to send him a culture of the microörganism which he is now using in his inoculations, and that it be submitted to a competent bacteriologist for comparison with my cultures and for an experimental test of its pathogenic power.

The fact repeatedly asserted by me, and verified by the researches of Gibier, and of several competent bacteriologists in Cuba and elsewhere, that Freire's micrococcus is not found in the blood and tissues of yellow fever cadavers (as asserted by Freire), seems to have no weight with Dr. Gaston. This fact can be easily ascertained by any competent microscopist who may be disposed to go to Havana for the purpose of making personal investigations. As to the "sharp practices," and the effort to "forestall and checkmate the legitimate outgrowth of the facts presented by Dr. Domingos Freire," to which Dr. Gaston refers, I have no knowledge. The results of my personal investigations have been given in full in my published reports, and I must leave the profession to judge of the value of these investigations as compared with Dr. Freire's statistical figures.

Very truly yours,

GEO. M. STERNBERG,
Deputy Surgeon-General U. S. A.
ARMY BUILDING, NEW YORK.

THE GROSS MONUMENT FUND.

To the Editor of THE MEDICAL NEWS,

SIR: The article in THE MEDICAL NEWS of March 11, p. 276, relative to the state of the fund which is being raised to erect a monument as a memorial of the late Professor Samuel D. Gross, is misleading, and might prove embarrassing to the committee charged with the duty of making collections for the prosecution of the work.

The proposition to erect a monument to the memory of Professor Gross originated in the American Surgical Association, and was presented in the annual address of the President, Dr. C. H. Mastin, of Mobile, September 22, 1891. The president of the Association was authorized to appoint "a committee with authority to confer with the friends and admirers of the late Professor Samuel D. Gross and *with the profession at large*, for the initiation of a movement on the part of the Association having for its object the erection of a monument to Dr. Gross in the city of Washington, D. C."

Dr. J. R. Weist, of Richmond, Ind., was made chairman of the committee; Dr. C. H. Mastin, of Mobile, secretary, and Dr. John B. Roberts, of Philadelphia, treasurer.

In July, 1892, the Alumni Association of the Jefferson Medical College voted to appoint a committee to raise money to promote the object proposed by the American Surgical Association.

The estimated cost of the monument is $12,000. Dr. Weist writes me of date the 11th inst.:

We have subscribed to the fund (all supposed to be good)	$4,100
Cash on hand	493
	$4,593
As treasurer of the Alumni Committee I have in cash	$910.75
Subscribed (considered good)	200.00
	$1,110.75
Total subscribed and collected	$5,703.75
There remains to be collected the sum of	$6,396.25

The committee has the assurance of further contributions amounting to $4000 which they are not at present authorized to make public. There will still remain to be collected the sum of $2396.25, all of which, it is believed, can be raised if the American Surgical Association will reconsider its action relative to the location of the monument in the city of Washington, and assent that it may be erected in Fairmount Park. The Committee of the Alumni Association has done no more than to present the subject of exchange of location to the American Surgical Association Committee, and has received favorable individual expressions. The subject will be presented at the next meeting of the Association. If we can offer further encouragement from the action and sentiment of our community in the nature of a guaranty that the whole sum remaining to be raised will be furnished, we have assurances that the change of location will be approved.

Respectfully yours,

John B. Chapin, M.D.

Pennsylvania Hospital for the Insane,
Philadelphia, March 20, 1893.

[The foregoing letter was written in response to our invitation, in order to make clear the condition of the fund. The information in The News of March 11, as stated by Dr. Chapin, seems to have been misleading.—[Ed. News.]

NEPHRITIS WITHOUT ALBUMINURIA.

To the Editor of The Medical News,

Sir: I beg to state that I am investigating as to the frequency of kidney degeneration without albuminuria—a condition which I am inclined to believe not uncommon. I would esteem it a very great favor indeed if any physician would communicate with me who has one or more cases in which the symptoms suggest Bright's disease, such as changes in the fundus oculi, more or less persistent headache, vertigo, alteration in the normal amount and specific gravity of the urine, and other symptoms which may be referred to renal inadequacy, yet in which cases the absence of albumin from the urine and the failure to detect casts has led to the exclusion of Bright's disease.

Very respectfully yours,

D. D. Stewart, M.D.

2620 North Fifth Street, Philadelphia.

NEWS ITEMS.

Preliminary Program of the Section of Neurology and Medical Jurisprudence, American Medical Association, to be held at Milwaukee, Wis., June 6, 7, 8, and 9, 1893. Officers of the section: Charles K. Mills, M.D., 1909 Chestnut Street, Philadelphia, Pa., chairman; James G. Kiernan, M.D., 834 Opera House Block, Chicago, Ill., secretary.

Dr. William Osler, "Anorexia Nervosa;" Dr. Irving C. Rosse, "Evidences of Paranoia Gleaned from the United States Patent Office;" Dr. Harold N. Moyer, "Acromegaly;" Dr. Henry H. Donaldson, "On the Weight of the Brain;" Dr. Harriet C. B. Alexander, "Paretic Dementia in Women; Dr. Daniel R. Brower, "Suggestions on the Treatment of Sclerosis of the Spinal Cord;" Dr. Archibald Church, "I. Occupation Neuroses Affecting the Muscles of the Neck, II. Syringomyelia;" Dr. James G. Kiernan, "Malpractice in Insane Hospitals;" Dr. L. Harrison Mettler, "I. Hemiparaplegia, Report of a Case Completely Recovered After One Year's Duration. II. Aural Vertigo (Ménière's Disease);" Dr. E. S. Talbot, "Race Degeneracy and the Jaws;" Dr. G. F. Lydston, "Remarks on the Therapeutical Use of Static Electricity;" Dr. T. H. McBride, "Thoughts on the Causation of Insanity;" Dr. James J. Putnam, "Recent Discoveries and Observations Bearing on the Subject of Poisoning from Exposure to Arsenical Wall-Papers;" Dr. Thomas D. Crothers, "American Inebriate Asylums;" Dr. E. D. Fisher, "Transverse Myelitis;" Dr. Landon Carter Gray, "What Should Constitute Legal Responsibility, in the Medical Sense, in Insanity;" Dr. Graeme M. Hammond, "On the Proper Method of Determining Whether an Alleged Lunatic Shall be Declared Legally Insane or Not;" Dr. Frederick Peterson, "Care of Epileptics;" Dr. Bernard Sachs, "Syphilis of the Cord Simulating Tabes;" Dr. Thomas G. Morton, "Some Medico-Legal Experiences in Railway Cases;" Dr. Wharton Sinkler, "Some Points in the Weir Mitchell Rest Treatment;" Dr. James Hendrie Lloyd, "A Study of the Gliomatous Process in the Spinal Cord—illustrated by Microscopical Sections;" Dr. Francis X. Dercum, "Symptomatology of Cerebellar Tumor;" Dr. Charles A. Oliver, "A Study of the Ocular Symptoms in

Friedreich's Disease;" Dr. Hobart A. Hare, "Has the So-called Suspension Treatment of Diseases of the Spinal Cord Proved an Addition to Our Therapeutics;" Dr. J. Madison Taylor, "I. Notes on the Treatment of Exophthalmic Goitre. II. Insanity in Childhood;" Dr. Charles W. Burr, "A Contribution to the Study of Friedreich's Ataxia;" Dr. D. D. Stewart, "The Diagnosis of Lead Convulsions;" Dr. John B. Deaver, "A Consideration of the Different Trigeminal Operations for the Relief of Pain;" Dr. Henry Leffmann, "Experiences of a Chemist with Delusional Insanity;" Dr. Charles K. Mills and Dr. G. E. de Schweinitz, "Hemianopsia and Certain Symptom-groups in Sub-cortical Lesions;" Dr. Charles K. Mills, "Paranoia in Some of its Medico-legal Aspects;" Dr. Isaac N. Kerlin, "Early Recognition and Rational Treatment of Moral Imbecility;" Dr. Theodore Diller, "A Case of Sub-cortical Cyst of the Lower Part of the Ascending Parietal Convolution—Operation, Recovery;" Dr. Frank T. Norbury, "Insanity of the Aged;" Dr. Annette McFarland, "Gynecology in the Insane;" Dr. C. H. Hughes, "Dyspepsia as a Nervous Disease, or Indigestion in its Nervous Aspects and Relations;" Dr. J. T. Eskridge, "Case of Syphilis of the Pia, Simulating Tumor of the Brain, Mono-spasm and Mono-paresis—Operation, Death on the Third Day;" Dr. H. A. Tomlinson, "The Inadequacy of the Morbid Anatomical Changes Found Post-mortem to Explain the Manifestations of Insanity;" Dr. R. M. Phelps, "Degrees of Responsibility as Found in the Insane;" Dr. C. B. Burr, "Surgery in the Insane;" Dr. T. L. Wright, "The Special Influence of Alcohol on the Body."

Preliminary Program of the American Academy of Medicine Meeting, June 3 and 5, 1893, at Milwaukee.—Report of Committee on the Requirements for Preliminary Education in the various Medical Colleges in the United States and Canada. Report of Committee on the Comparative Value of Academical Degrees. "The Attitude of Our Medical Schools in Relation to Preliminary Studies," R. Lowry Sibbet, Carlisle, Pa. "What Mental Faculties Should be Specially Trained for the Study of Medicine?" James W. Moore, Lafayette College. "The Classics and the Common Schools," J. Berrien Lindsley, Nashville, Tenn. President's Address. "What Should be Required in an Entrance Examination to a Medical School?" James W. Holland, Jefferson Medical School. "Should There be Elective Studies in a Medical Course?" P. S. Conner, Medical Department, Dartmouth College. "On the Endowment of Medical Schools," George M. Gould, Philadelphia. Report of the Committee on the Laws Regulating the Practice of Medicine. "The Duty of the State to Medicine," Benjamin Lee, Philadelphia. "The Importance of the Study of Medical Sociology," Charles McIntire, Easton, Pa. Title to be announced later—C. C. Bombaugh, Baltimore.

American Medical Editors' Association.—The Eleventh Annual Meeting of the Association is to be held in Milwaukee, Wis., June 5, 1893. Dr. Ernest Hart, editor of the *British Medical Journal*, will deliver the annual address. This will be followed by other addresses and discussions which promise to be of unusual interest to every editor and medical journal in the country.

Dr. Theodore Diller has been appointed visiting physician to the insane deparment of St. Francis's Hospital, Pittsburg.

BOOKS AND PAMPHLETS RECEIVED.

Cases of Symmetrically-placed Opacities of the Corneæ, Occurring in Mother and Son. By Charles A. Oliver, M.D. Reprint.

Ophthalmometry in the United States, and its Championship. By A. E. Davis, M.D. Reprint, 1893.

Supra-vaginal Hysterectomy without Ligature of the Cervix, in Operation for Uterine Fibroids; a New Method. Cases of Chronic Ovarian Abscess Illustrating the Danger of Delay in their Proper Management. Drainage in Abdominal Surgery: its Unnecessary and Excessive Use. By B. F. Baer, M.D. Reprint, 1893.

The Retention of Binocular Vision with Two Glasses of Different Strengths. By Arthur D. Mansfield, M.D. Reprint, 1893.

Proceedings of the Philadelphia County Medical Society. Vol. XIII. Session of 1892. Lewis H. Adler, Jr., M.D., Editor. Philadelphia: Published by the Society, 1892.

Transactions of the American Ophthalmological Society. Twenty-eighth Annual Meeting. Hartford: Published by the Society, 1892.

Saint Bartholomew's Hospital Reports. Edited by W. S. Church, M.D., and W. J. Walsham, F.R.C.S. Vol. XXVIII. London: Smith, Elder & Co., 1892.

A Case of Hysterical Astasia-abasia Suing for Damages. By L. Bremer, M.D. Reprint, 1893.

Itching of Central Origin, or Brain Itch. By L. Bremer, M.D. Reprint, 1892.

Akromegaly. By Joseph Collins, M.D. Reprint, 1893.

Contributions from the Surgical Service of St. Mary's Hospital for Children. By Charles T. Poore, A.M., M.D. Reprint, 1892.

Fracture of the Skull from the Discharge of a Shotgun into the Left Orbit. By Wyatt Johnston, M.D. Reprint, 1893.

Is Evolution Trying to Do Away with the Clitoris? By Robert T. Morris, A.M., M.D. Reprint, 1892.

Die Zersetzung animalischer Materie, nebst Anhang: Heilkunst und Heilwissenschaft. Von Dr. Heinrich Stern. Zweite Auflage. Milwaukee, Wis.: Freidenker Publishing Co., 1892.

Clinical Reports on Insanity. By the Medical Staff of the Maryland Hospital for the Insane. Baltimore, Md.: James Young, 1892.

Fourth Annual Report of the Health Department of the City of Mansfield, Ohio. By R. Harvey Reed, M.D. 1892.

Resection of the Optic Nerve. By Dr. Rohnur. Translated by L. Webster Fox, M.D. Reprint, 1893.

Insanity in Early Childhood. By Wharton Sinkler, M.D. Reprint, 1893.

An Outline of the Technique of Abdominal and Pelvic Operations, as Performed in the Medico-Chirurgical Hospital of Philadelphia. By William Easterly Ashton, M.D. Reprint, 1893.

The Year-Book of Treatment for 1893. Philadelphia: Lea Brothers & Co., 1893.

Reflex Amblyopia. By J. Walter Park, M.D. Reprint, 1893.

Diseases of the Skin. By Charles C. Ransom, M.D. Philadelphia: Lea Brothers & Co., 1893.

A Consideration of Some Modern Therapeutic Agents in the Treatment of Diseases of the Stomach. By David D. Stewart, M.D. Reprint, 1893.

Treasury Department. United States Quarantine Laws and Regulations. Washington: Government Printing Office, 1893.

The Annual Report of the Health of the Imperial Navy for the Year of Meiji (1891). Tokyo.

Fixation after Excision of the Knee. By H. Augustus Wilson, M.D. Reprint, 1893.

Thermotaxis in Birds. By Isaac Ott, M.D. Reprint, 1893.

Annual Reports of the Managers and Officers of the State Asylums for the Insane, for the Year ending October 31, 1892. Trenton, N. J.: The John L. Murray Publishing Co., 1892.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LXII. SATURDAY, APRIL 15, 1893. NO. 15.

ORIGINAL LECTURE.

THE CHEMISTRY AND THERAPEUTICS OF NITROUS OXID.[1]

BY CHARLES MILTON BUCHANAN, M.D.,
OF WASHINGTON, D. C.

FOR some inexplicable reason nitrous oxid, which is a valuable adjuvant in the alleviation of human suffering, seems to have been almost entirely relegated to the dental profession. In fact, it is used almost entirely to effect the painless extraction of teeth. There are, however, many other minor operations just as painful as tooth-extraction, whose *technique* is just as simple and whose successful issue demands no more time. Why are these not consummated under nitrous-oxid anesthesia?

Frequently it is desirable, if not absolutely necessary, to yield to the plea for "something to keep it from hurting," even in apparently trivial operations—especially if the nervous, emotional, impressionable elements preponderate in the patient's organization. The injection of cocaine is neither altogether painless nor entirely free from danger—the toxicity of the drug being to a certain extent a not altogether well-defined or accurately determined property, small doses sometimes causing dangerous and alarming symptoms, and *vice versa*.

Chloroform is certainly not free from danger, although its administration is not altogether unpleasant. As Lauder Brunton has tersely said: "It is like a sharp knife in the hands of the surgeon, as compared with a blunt one. It is more efficient for good, if properly handled; it is more powerful for evil, if misused." How many general practitioners are really expert in the proper administration of chloroform? Ether, while safer than chloroform, is more disagreeable, frequently causing hypersecretion from the mucous membranes of the respiratory tract, nausea, emesis, depression, sometimes even "spasm of the glottis." We are speaking now of the use of anesthetics in minor operations which are either not sufficiently serious or whose results are not sufficiently important to outweigh the fact that the patient's life is put in greater or less jeopardy by the agents spoken of.

Nitrous oxid, as we shall endeavor to show, is practically harmless, or at least incomparably safer than either cocaine, chloroform, or ether, and it is, moreover, not difficult of administration. True, its effects *are* transitory, but so are those of chloroform or ether; continuous anesthesia in either case being only secured by continuous administration.

Formerly the cumbersome apparatus required for the generation and administration of nitrous oxid did prove a consideration of some weight; but at the present time, when sufficient condensed or liquefied gas for from half a dozen to a dozen administrations can be obtained in portable iron cylinders, this objection, it must be admitted, cannot be urged as of great importance. Such cylinders should find their way into almost every physician's office; they both can and should be used in many minor operations.

When the physician or surgeon can alleviate pain or physical suffering and not jeopardize either health or life, it is not only expedient, but even obligatory, that he should do so. The apprehension and imagination of an individual can and will frequently magnify the pain of a simple incision a thousand-fold, and thereby induce a condition of mental excitation which certainly is neither desirable nor beneficial. Where we possess simple and harmless means, it is our duty to relieve the induced mental anguish, as well as the actual physical pain. Nitrous oxid not only can be, but has been, used for such purposes, and its unfailing success certainly merits for it a more general use. It has been used, among others, under the following conditions: dilatation of sphincters, lancing of felons and abscesses, injecting hydroceles, carcinoma of the lip, phimosis, compound and comminuted fractures, lithotrity, lithotomy, tracheotomy, amputation of the breast. In none of these can dissatisfaction or failure be recorded, as far as the anesthetic is concerned; on the contrary, not only was anesthesia satisfactorily maintained, but it was quickly produced, and after the operation its effects were quickly dissipated, without consequent nausea or other disagreeable symptoms.

Rapid production and rapid dissipation of anesthesia are marked when nitrous oxid is used. In the extensive series of experiments published by the Odontological Society of Great Britain, it was determined that, when the administration of the gas was pushed, complete anesthesia was produced in males in *eighty-seven seconds!* And that, after cessation of the administration of the anesthetic, consciousness supervened in one hundred and fifteen seconds, *or slightly less than two minutes!* Hence it is possible by the use of nitrous oxid to produce anesthesia, perform a minor operation, and fully restore consciousness *within five minutes*. What anesthetic known to modern science can parallel this?

Now, there is a reason for these phenomena. Most general anesthetics are highly volatile liquids, and are introduced into the system by means of the respiratory tract; they must, therefore, first be vaporized. With some due allowance, the anesthetic activity or rapidity (if I may be allowed the use of such a term) of most anesthetics is largely in direct ratio to their respective rates of volatility. Now, nitrous oxid is naturally a gas; even the compressed or liquefied form, which exists by reason of the exercise of pressure, assumes the gaseous state *simultaneously* with the release of pressure. Therefore, it is instantly ready for introduction into the system, without necessitating the expenditure of a single

[1] Delivered at the National University, December 16, 1892.

second of time to effect an intermediate vaporization. Therefore, also, its effects are soonest manifested. Moreover, being a nerve-stimulant, the mental and physical faculties are stimulated to a return to their natural functions when the administration of the anesthetic has ceased, and consequently consciousness supervenes more rapidly. Again, nitrous oxid is much more soluble in the blood than either chloroform or ether; it is, therefore, taken into the system more rapidly and in greater quantity; hence its effects are manifested more rapidly. For the same reason its elimination is effected in a shorter period of time. It is more probable that the rapid production and the rapid dissipation of anesthesia are due to the greater solubility of the agent.

Nitrous oxid gas was discovered in 1776 by Priestley, the English clergyman and scientist, who, however, elucidated but few of its properties. It was first brought into general notice in 1800 by Sir Humphrey Davy, the famous English physicist and chemist, who first discovered and made known those peculiar and remarkable exhilarating properties which earned for it the name of "laughing gas."

Davy says: "As nitrous oxid, in its extensive operation, seems capable of destroying physical pain, it will probably be used with advantage during surgical operations in which no great effusion of blood takes place."

Strange as it may seem, this valuable suggestion and remarkable prediction remained unheeded for nearly half a century—that is, as far as its practical application is concerned. In fact, the gas was largely regarded as merely one of those curious things which were more fit for lecture-room experiments than for practical application. Matters remained in this condition until December, 1844, when, in an adventurous spirit, Dr. Horace Wells, of Hartford, Connecticut, underwent an extraction of a tooth while rendered unconscious by means of nitrous oxid. So successful was this experiment that he attempted to establish the practice of inducing anesthesia by this means in dental surgery; but in consequence of an unfortunate failure in Boston he abandoned it forever. The use of nitrous oxid as an anesthetic was revived in 1863 by Dr. Colton and has been in general employ ever since.

Nitrous oxid is never found free in nature. It may be prepared by the reduction of nitric acid, by treating copper with concentrated nitric acid, and by heating ammonic nitrate. The gas produced by either of the first two methods is always contaminated with *nitric* oxid (NO) and is, therefore, unfit for use. The only process possessing any practical value is that in which ammonic nitrate is decomposed by means of heat. The reaction is thus tersely expressed:

$$NH_4NO_3 + \text{heat} = N_2O + 2H_2O.$$

The operation is usually conducted in a retort or a Florence flask. To some portion of the delivery tube a condensing device is attached, whereby the aqueous vapor is separated from the gas by condensation. This device usually consists of a glass bottle or flask submerged in a cold bath.

All ammonic compounds are more or less volatile under the influence of heat; therefore, if the heat is not carried rapidly up to such a degree as will decompose the nitrate, portions will be volatilized unchanged—that is, sublimed. Decomposition is not accomplished—that is, gas is not evolved—until the temperature has reached about 460° F.; at 480° the gas is disengaged freely and rapidly. The temperature should not be carried beyond the latter point, because at 500° and above the exceedingly objectionable and dangerous gas, *nitric* oxid (NO) is also given off. After its disengagement the nitrous oxid is collected in a gasometer by "wet displacement," the liquid over which it is collected being warm water or, better, warm brine. The gas is quite soluble in water, 130 parts of the latter dissolving 100 parts of the former. It will therefore be absorbed until the liquid becomes "saturated" with the gas. Then, as the saturated liquid gradually gives up portions of its dissolved gas to the atmosphere it will draw upon that which is stored away to replenish the loss; this can be remedied to a certain extent by covering the water in the receiver with a thin film of some non-volatile oil.

Even with the greatest care the gas is likely to contain impurities, which must be removed before use. These are chiefly nitric oxid (NO), from the high temperature; chlorin (Cl), from the decomposition of ammonic chlorid (NH_4Cl), which is one of the most frequent impurities in ammonic nitrate; ammonia gas (NH_3), and nitric acid (HNO_3), from improper regulation of the heat and a consequent improper decomposition of the nitrate. All of these substances in appreciable quantities are prejudicial to health, and hence *must* be removed before the gas is respirable. To this end the gas should be passed through a solution of ferrous sulphate ($FeSO_4$), commonly known as "copperas" (probably on the principle of *lucus a non lucendo*, because it contains no copper); then through a solution of potassic hydroxid, commonly known as "caustic potash"; and lastly through pure water. The "copperas" solution will remove any nitric oxid (NO) and also some of the nitric acid (HNO_3) present. If care be taken in the regulation of the heat—that is, if it be not allowed to reach the proximity of 500°—the "copperas" solution is really unnecessary. But if it be used, which is more advisable, we possess a safeguard against deleterious substances generated by carelessness or accident in the regulation of heat. The "potash" solution will remove any chlorin (Cl) or nitric acid (HNO_3) present; and the water, especially if slightly acidulated, will remove any ammonia gas (NH_3) present. Ammonia gas and nitric acid, however, are not common impurities, the commoner ones being chlorin and *nitric* oxid.

Nitrous oxid is a clear, colorless, gaseous body, possessing a sweetish odor and taste. It is 1.527 times heavier than air; as already stated, it is soluble in water; it is more soluble in alcohol. It is not very soluble in *warm* water and much less so in warm brine, and is easily liquefied by the application of cold or pressure. It will neither burn nor support life for any considerable length of time. It will, however, support *vigorous* combustion, but not feebly burning bodies; for instance, burning sulphur or a *feebly* glowing ember will be extinguished when immersed in the gas, but a vigorously burning stick of wood will burn even more actively or brilliantly in the gas. Bodies which have great chemical activity in combining with oxygen, such as phosphorus, burn very readily in this gas.

The characteristic feature of nitrous oxid gas lies in its marked anesthetic properties; according to the amount ingested it induces intoxication, exhilaration, and finally complete insensibility. It is also said to possess slight tonic and diuretic properties, for the exhibition or production of which it is recommended either in substance or in aqueous solution. It is essentially a nerve-stimulant, like oxygen, but it has the advantage of influencing both the intellectual and the emotional natures. It is now considered a perfectly safe anesthetic, the mortality from its use being almost *nil*.

Chemically, nitrous oxid resembles oxygen more nearly than any other substance, although its compound nature naturally prevents very great chemical activity. In fact, this is the substance widely advertised by quacks under the name "compound oxygen." We can probably contrast the differences between oxygen and nitrous oxid best by placing them in tabular form:

	Nitrous oxid.	Oxygen.
Odor	Sweetish.	None.
Taste	Sweetish.	None.
Solubility in water .	10 parts dissolved in 13 of water.	Slight.
Effect on combustion	Supports only *vigorous* combustion.	Supports *all* combustion.
Nitric oxid (NO) .	No effect.	Red fumes of NO_2.

Of course, by far the greatest and almost only therapeutic application of nitrous oxid is as an anesthetic. Nevertheless it has been recommended as very efficacious in the treatment of such disorders as mania, dementia, melancholia, neuralgia, sciatica, insomnia, hypochondria, hysteria, asthma, some forms of functional heart-trouble, and also for all of the disagreeable symptoms that follow in the train of the morphine and tobacco habits. Its use, diluted with air, in the treatment of certain forms of atonic nervous disease, is highly indorsed by Allen McLane Hamilton. It is also recommended by Ziegler as a stimulant in chloroform-poisoning, in poisoning by carbon dioxid, carburretted hydrogen, hydrocyanic acid, and also in suspended animation from any cause. However well-sustained Ziegler's claims may be, the use of oxygen would be infinitely superior under the conditions enumerated. For internal administration the gas is given by inhalation or in aqueous solution, either by the mouth or by the rectum.

However rosy and bright these claims may be, they have been disputed. Several investigators have searched diligently for evidence to warrant the placing of nitrous oxid in the already overburdened armamentarium of materia medica; but most of these have been forced to the conviction that such efforts were useless. The result has been fitly expressed by Birdsall;[1] he tried the new aspirant in migraine, persistent headache, the muscular pains of influenza, paralysis agitans, asthma with chronic bronchitis, insomnia, melancholia with organic cardiac disease, the opium-habit, hypochondriasis, neurasthenia, mental depression resulting from alcoholic indulgence, chronic bronchitis, and hysteria. In not a single instance did benefit follow—in fact, he expressed himself thus: "My own view, based on the physiological and clinical data which I have been able to collect up to the present time, is that the uses of nitrous monoxid for medical and surgical purposes are restricted to its effects as an anesthetic and a *placebo*." Clinical experience seems to force us to the belief that internal medicine can hope to find no special merits in this substance.

To the majority of physicians nitrous oxid is known only as a general anesthetic; it can also be used as a local anesthetic. As supplied, compressed and liquefied, it is convenient for the production of either form of anesthesia. On release of pressure the liquid nitrous oxid immediately assumes the gaseous form, and in doing so "absorbs heat" from surrounding objects, or, as is sometimes said, "renders heat latent." If a spray is allowed to play upon a part it will produce local anesthesia of the part, just as in the case of the ether-spray or prolonged contact with ice; this anesthesia, although produced in a manner similar to that obtained by use of the two last-named agents, is probably slightly more advantageous.

When first inhaled, nitrous oxid is said to cause an acceleration of the pulse which soon gives way to depression. In my opinion this temporary acceleration is largely due to the excitement under which the patient naturally labors and which is soon overcome by the depressing action of the gas. If the pure gas be inhaled insensibility is usually produced in from half a minute to three minutes; when insensibility becomes complete, there is accompanying deep cyanosis, caused by venous stasis, and also stertorous breathing. This cyanosis is striking and alarming to one witnessing it for the first time; it is indicative of cardiac depression.

Anesthesia is most probably caused by a combination of three factors, namely: asphyxia, cell-paralysis, and cell-coagulation. In asphyxia the blood lacks sufficient oxygen to carry on the normal functions of oxidation; this condition can be induced by any agent capable of cutting off the supply of oxygen to the blood. That nitrous oxid does cause such a condition is shown by the following events: 1. Cardiac and *pulmonic* depression; 2. Cyanosis; 3. The symptoms of asphyxia do not supervene when about 20 per cent. of oxygen is added to the nitrous oxid—*neither is anesthesia produced;* 4. Animals immersed in nitrous oxid die of asphyxia,[1] with all of the symptoms caused by immersion in nitrogen; 5. The blood in nitrous oxid narcosis shows a marked deficiency of oxygen, the spectroscope revealing the presence of *reduced* hemoglobin; 6. Animals immersed in nitrous oxid live no longer than when immersed in nitrogen.

The fact that anesthesia is dependent to some extent upon the production of asphyxia is shown by the facts that—

1. Insensibility does not supervene until the proportion of oxygen in the blood is reduced to 3 or 4 per cent.; 2. Anesthesia is not produced if appreciable quantities of oxygen be mixed with the nitrous oxid; 3. Complete anesthesia does not occur until the blood becomes very dark; 4. Nitrogen is capable of producing the same phenomena as nitrous oxid;[2] 5. The blood

[1] New York Medical Journal, March 7, 1891.

[1] British Journal of Dental Science, xxv, 725. Philadelphia Medical Times, Nov. 15, 1873.

[2] Archives de Physiologie, July, 1873.

during the stage of narcosis shows the presence of *reduced* hemoglobin.

It must be accepted, then, that asphyxia is induced and that it is at least one factor in the production of anesthesia, and the most important one at that; for the other causes are really effects of nitrous oxid asphyxia. As a result of this condition the supply of oxygen to the nerve-centers is cut off, and their nutrition and functional activity thereby suffers.

Nitrous oxid is a nerve-stimulant; its action upon the impaired nerve-centers probably produces cell-paralysis by over-stimulation, but asphyxia places the cell in the condition in which the over-stimulation is enabled to produce such effect.

Cell-coagulation is probably due to a combination of both of the foregoing causes, namely, asphyxia and over-stimulation. If the transmission of sensations, pains, or motor influences is a matter of molecular motion or activity, we can readily see how coagulation can impair or overcome entirely such transmissions by either retardation or cessation of molecular activity.

Asphyxia and its phenomena are dependent upon the altered condition of the blood. As the brain contains a relatively large amount of blood, if anesthesia depends to any extent upon asphyxia its effects upon the brain should be among the first exhibited. In fact, the cortical functions are most readily disturbed by any impairment of the phenomena of oxygenation, and the first and most striking effects of nitrous oxid are shown in disturbed cerebral action and impairment of the higher cerebral functions. Dr. Underwood claims that under the influence of the anesthetic there is a progressive paralysis of:

1. The cerebrum, in consequence of which volition is destroyed.

2. The sensory centers of the cord; motion becomes erratic; sensory stimuli are not responded to.

3. The motor centers of the cord, as a result of which motion is destroyed.

4. The motor and sensory centers of the medulla oblongata, after which respiration, the heart's action, and all the functions of life cease and death supervenes.

The chief danger lies in cessation of respiration and circulation; it is more important, however, to watch the respiration, for the heart flags last. Notwithstanding all this, nitrous oxid is extremely safe, for long before life is actually menaced ample warning is given by many obvious danger-signals. Moreover, it is never desirable to push the anesthetic beyond the production of stertor and cyanosis. Any such dangerous symptoms as may arise are readily amenable to the administration of oxygen, artificial respiration, and stimulation of the heart and lungs.

Statistics give the number of deaths under chloroform as one in three thousand, or thirty-three thousandths of one per cent. (0.033 per cent.); while the deaths under ether are given as one in twenty thousand, or five thousandths of one per cent. (0.005 per cent.). At the Tenth International Medical Congress held in Berlin in 1890, it was stated that fully seven hundred and fifty thousand persons annually took nitrous oxid *in the United States alone*. Making on this basis an "average" calculation, between ten and eleven million people have taken the gas in this country since its reintroduction by Dr. Colton. In that time only six cases of death attributed to nitrous oxid have been reported in the United States; and of these, four have been eliminated as being in no way caused by the gas. Of the remaining two deaths one occurred in 1864, just one year after the reintroduction of the use of nitrous oxid, when its nature, effect, impurities, and methods of their removal were not fully understood. The patient *fully* recovered from the effects of the gas, walked into an adjoining room apparently well, returned, complained of pain and dyspnea, sank upon a sofa, and expired in a few minutes. The coroner's verdict was death from congestion of the lungs induced by inhalation of nitrous oxid gas. The latter half of this verdict is ridiculous; in the first place, consciousness supervenes rapidly, and when consciousness has been restored the patient is in no danger from the gas; in the second place, the patient had fully recovered from the effects *of the gas;* the unpleasant symptoms described were not due to it, but to some irritant *impurity*, undoubtedly either chlorin or *nitric* oxid. If the man died from congestion, it was induced by this impurity and not by the gas. The other case occurred in a dentist's office in Chicago two or three days before the great fire; on account of the confusion caused thereby the death became known to few and was soon forgotten. Of the particulars we know nothing, so that really there is no sound evidence upon which to charge even these two deaths to nitrous oxid; on that basis the mortality in this country would be *nil*. However, assuming the burden of these two deaths, its mortality would be represented as two in ten million five hundred thousand, or two-hundred-thousandths of one per cent. (0.00002 per cent.)! At this rate it is two hundred and fifty times safer than ether, and one thousand six hundred and fifty times safer than chloroform! And yet it is being constantly used by those of all shades of experience, from the tyro to the "expert"; many who would refuse to use either chloroform or ether do not hesitate to administer nitrous oxid; there are many who use it who know nothing of it. No anesthetic is handled so recklessly and ruthlessly and yet no anesthetic can parallel its marvellously low record of death. If other anesthetics were placed under like conditions, their mortalities would be multiplied a hundred-fold. Does it not, then, seem strange that with its few inconveniences and its incomparable advantages this agent is not more largely used?

217 D Street, N. W.

The Elimination of Lead in Chronic Lead-poisoning.—Mann (*British Medical Journal*, No. 1678, p. 401), from a careful study of two cases of chronic lead-poisoning, has arrived at the conclusion that lead is slowly and more or less continuously eliminated by the bowels and, to a much less extent, by the kidneys. Once deposited in the tissues it exists as a stable chemical compound, upon which drugs have little if any influence. The best aids to elimination are baths and massage, together with fresh air, good food, and all other measures by means of which the general health may be improved and healthy metabolism be promoted. It is denied that potassium iodid promotes elimination of lead, although it is admitted that the drug exerts a beneficial influence in some other way.

ORIGINAL ARTICLES.

SUPPURATIVE PYLEPHLEBITIS AND HEPATIC ABSCESS SECONDARY TO APPENDICITIS: WITH A REPORT OF TWO CASES.

By GEORGE ERETY SHOEMAKER, A.M., M.D.,
VISITING SURGEON TO THE METHODIST HOSPITAL OF PHILADELPHIA.

Suppurative pylephlebitis with hepatic abscess is so unusual during life and frequently so obscure a condition before death that it is often overlooked and seems to receive but little attention among clinicians, particularly those of England and America. Two cases that occurred in my practice within the past few months have been reported to the College of Physicians, of this city,[1] and are of more than usual interest. It may be worth while narrating them, to call renewed attention to a disease the literature concerning which is widely scattered and not abundant.

Case I. *A common pin in the vermiform appendix; secondary retro-peritoneal infection; liver-abscess.*—H. P., aged eighteen years, a furniture polisher, when admitted to the surgical ward of the Methodist Hospital, under my care, was suffering from urgent symptoms of bowel-obstruction, fecal vomiting, and subnormal temperature, with well-marked peritonitis. He died about thirty hours after an operation undertaken for abscess about the appendix. The condition of the liver and retro-peritoneal tissues was unknown at this time and was completely masked; otherwise no operation would have been undertaken, as death was inevitable.

The history previous to admission was meager and unsatisfactory. The man had been ill twelve days, chiefly under home treatment. The trouble began with a chill and coincident pain in the right hypochondrium, which his sister since states he then referred to as "that old pain." When first seen, about an hour before the operation, he had had complete obstruction of the bowel for five days, and obstinate constipation for several days before that. There had been fecal vomiting and subnormal temperature for twelve or fifteen hours, with evident peritonitis.

The abdomen was very tense; the walls edematous, dusky, and more resistant in the right iliac region, though from the great tension the presence or absence of a tumor could not be made out. The breathing was thoracic, 36 to the minute; the temperature, 95.6°; the pulse, from 90 to 118; the mind clear, though there had been delirium. There was no pain, but a gulping up rather than a vomiting of a thin, brown, offensive fluid, with decided fecal odor. Well-applied efforts to move the bowels with calomel, salines, and gravity enemata of glycerin, magnesium sulphate, and turpentine, had failed. There was no discoverable evidence of liver-disease; no jaundice, soreness, redness, venous obstruction, or demonstrable enlargement of the organ; while there was evident obstruction of the bowels, with peritonitis, which the dusky and edematous appearance referred to the right side.

Incision in the right semilunar line disclosed pus and thick, yellow lymph as soon as the peritoneum was cut. Two or three ounces of pus were washed out from a cavity within the peritoneum, limited outwardly by the pelvic wall and inwardly by adherent coils of intestine. The intestines were tightly distended, and as adhesions appeared to limit the pus-cavity on all sides, it was not considered wise to search for and remove the appendix, which could not be readily felt. Taking into consideration the man's condition, such an attempt at this time would have been highly dangerous. The abscess-cavity was flushed with boiled water and packed with iodoform-gauze about a glass drain, the incision being left open. This procedure gave great relief. The temperature rose to normal, and in a few hours reached 99.8°. The vomiting and hiccough stopped at once, while large quantities of urine began to be excreted, no less than eighty-seven ounces being obtained by catheter at short intervals in the next twenty-four hours. The improvement did not, however, continue beyond this period. The bowels did not move and the patient sank rapidly on the evening of the day following the operation, the pulse having never been over 120, the temperature never over 100.6°.

Post-mortem examination showed the cavity at the seat of operation to be clean and sweet. The parietal surface of the great omentum was bathed in pus, which had apparently come from a ruptured abscess of the liver. There was no pus upon the intestines, but a very recent general peritonitis had caused slight general bowel-adhesions and a widespread deposit of fresh, translucent coagulated lymph, which, immediately below the liver and in the left flank, was yellowish and in semi-solid masses. The appendix extended downward, and, though much distended, inflamed, and surrounded by recent plastic deposit, was apparently not perforated; nor was it gangrenous. It contained a common pin, head downward. There was purulent inflammation of the connective tissue and veins behind the peritoneum and along a path, two or three inches wide, from the root of the mesentery upward along the front and to the left of the spinal column. This area, infiltrated with grayish pus, extended a short distance between the layers of the gastro-hepatic omentum and involved the structures at the transverse fissure of the liver. This organ contained within its substance an abscess, apparently acute, situated near the surface of the right lobe at its hightest point. The pus, which was yellow, occupied a single irregular cavity, in size 2 by 2 by 3 inches. The liver was easily separated from the diaphragm, pus appearing as soon as this was attempted. As has been said, the front surface of the great omentum was covered with fluid pus, which had not yet reached the intestinal surfaces in visible quantities.

It is probable that the *general* peritonitis was caused by the rupture of the hepatic abscess and

[1] Nov. 2, 1892; Feb. 3, 1893.

leakage in front of the liver and omentum after the operation. Had the whole attack, including the obstruction of the bowel at the time of operation, been due to a general and not to a localized peritonitis, it seems improbable that merely washing out the circumscribed area, which was shut off in the right side, would have caused the improvement noted for the first twenty-four hours.

It is also probable that the pin in the appendix was the original cause of trouble, and that it had, by piercing the appendix-wall and the adjacent peritoneum, infected the underlying connective tissue and veins. These veins belong to the portal system and reach the liver directly, though the neighboring lymphatics enter the general venous circulation by way of the thoracic duct, which enters the left subclavian vein. The abscess was single and was large for one of secondary infective origin. In size, however, it has a parallel in the following case:[1]

A French soldier, previously healthy, had pylephlebitis following appendicitis. At the autopsy there were found several abscesses of the liver, one of them large, involving the whole thickness of the left lobe of the liver. The portal vein was filled with pus to its smallest ramifications. There was jaundice, but no tympany and no general peritonitis.

It may be remarked in passing that the finding of a genuine foreign body in the appendix, such as this pin, is very rare; as almost all the bodies so found are fecal concretions, like that in the case about to be narrated. They may bear a general resemblance to "cherry-stones" or "grape-seeds," but are not such in reality.

CASE II. *Gangrene of appendix; acute suppurative inflammation of branches belonging to portal system; multiple liver-abscesses.*—This was almost a typical case of pylephlebitis suppurativa as described by Frerichs.[2]

W. S., seventeen years of age, a packer, had been previously healthy. His father died of enteric fever and the mother of apoplexy, though a year before her death I removed a sarcoma of the breast and axilla.

On November 12th, after eating indigestible food for breakfast and dinner, the patient worked for some hours in an unusual draught of cold air, and was seized with pain just below the navel, together with nausea, followed in the evening by vomiting. Two solid stools passed that day.

On the 13th the abdominal pain became localized in front of the anterior superior spinous process of the ilium on the right side, passing a little backward along the iliac crest. There was some difficulty in fully extending right thigh. He had a severe chill in the evening, followed by sweating and vomiting. He had one solid stool.

On the 14th localized pain continued. There was some nausea and gulping, but no vomiting; he had two severe chills (shaking his bed distinctly) in the evening, and two in the night, followed by profuse sweating. He had one loose stool.

I saw him for the first time on the 15th, finding him up and dressed at 9 A.M., with a temperature of 99° and a pulse of 90; the conjunctiva was yellowish; there was decided tenderness over the appendix, with resistance of muscles, but no tremor and no pain, even on full breathing; there was no tympany, and his mind was unusually clear. The diagnosis of appendicitis was announced, and the family informed that operation would have to be considered, though not at that moment demanded.

The patient now passed out of my hands, and I am permitted to report his subsequent history by courtesy only. He was admitted to one of out hospitals, where he had immediately a violent chill, followed by a temperature of 104° and sweating. Until this time the diagnosis did not appear at all obscure, but when seen next day by the visiting surgeon, the presence of appendicitis was not deemed positive, because local tenderness had disappeared from the right iliac fossa; nor was it developed by rectal pressure. There was not even thickening to be felt by the rectum, and the resistance of the abdominal muscles was slight. The abdomen was not only flat, but scaphoid.

From this time on until death, eight days later, the obscurity of the diagnosis deepened. Jaundice set in and soon became intense; there was almost complete insomnia, but no delirium. Full doses of quinine seemed to moderate the chills, while small doses of calomel were followed by frequent, thin, greenish stools. There was a very irregular temperature, reaching a little over 103° or dropping to 99°. The liver was somewhat enlarged but not tender; the spleen was also enlarged. Rapid emaciation followed, with brown, dry tongue; dulness succeeded the abnormal brightness of intellect, and the patient died a few hours after he had been tranferred from the surgical to the medical ward, and just twelve days after the onset of the disease.

Autopsy. Emaciation was deep and there was universal jaundice. The heart was normal; the lungs were moderately adherent at the apices, without abscesses. The kidneys were large, congested, the capsule stripping easily; no pus was present. The spleen was about twice the normal size and contained at least one hemorrhagic infarct as large as a pea. The intestines were not distended. There was no sign of general peritonitis; white gauze dipped in the scanty serum at the bottom of pelvis stained clear yellow. On lifting the cecum and separating extremely slight adhesions, about two drams of thin, gray, flocculent pus appeared about the appendix, which was thickened and gangrenous in its middle third, a slough about three quarters of an inch in length having dropped out of the posterior wall. A concretion, one-quarter of an inch in diameter, afterward shown to be fecal and not a gall-stone, occupied the upper and healthier third of the appendix, completely filling its lumen. An area of parietal peritoneum upon which lay the appendix was gray-

[1] Archives de Médecine et de Pharmacie Militaires, Paris, 1891, xviii, 62.

[2] Clinical Treatise on Diseases of the Liver, 1861.

ish-black and gangrenous, showing a small point of perforation. Behind the peritoneum and extending obliquely upward from the root of the appendix toward the front of the spine was an infiltrated area of loose connective tissue and veins, which could be picked up within the abdominal cavity like a section of bowel. This, when cut across, was seen to be inflammatory, the distended veins within it having thickened walls with a dirty-gray lining, and containing a grayish fluid. The liver was somewhat enlarged, and was studded throughout with abscesses of from a line to an inch in diameter. These were very numerous about the transverse fissure. The gall-bladder was distended by a mucoid fluid. No gall-stones were found. The brain was normal. No pus was found elsewhere than described. There were numerous ulcerations of the mucous coat of the cecum, the majority about two lines in diameter and the largest a third of an inch. One of these encircled the opening of the appendix into the cecum. This opening barely admitted a probe.

The points of interest in this case are two: Its obscurity from a diagnostic point of view after the liver-symptoms appeared; and the secondary venous and hepatic involvement.

The clinical history emphasizes the fact, well known to many, that the most serious disease of the appendix, going on to gangrene and perforation, may exceptionally exist without the traditional signs of peritonitis: without tenderness on deep pressure, without a demonstrable tumor, without tympany and without pain, at least in the later stages. There can be no reasonable doubt that operation on the third or fourth day would have saved this man's life by forestalling the infection of the veins, just as it would have killed him, or, at least, would have done no good, after the pyemic symptoms had set in. It is such cases as these, growing more obscure as the patient grows worse, that add force to the reasoning of those who would operate at once in every case as soon as the diagnosis of appendicitis is made. While there is, however, so large a preponderance of recoveries from attacks which do not go on to pus-formation, that position seems to me to be extreme.

The diagnosis of suppurative inflammation of the portal vein, or pylephlebitis suppurativa, is a matter on which there is no small difference of opinion. Some writers consider a diagnosis during life to be a mere matter of guesswork, while others consider it quite feasible. As has been suggested by Von Schüppel, this discrepancy can be accounted for by the obscurity or clear character of the cases individual writers may have seen. As few men see more than two or three cases, they are likely to generalize from these. The following points are given[1] as the most important in recognizing the condition:

1. "The presence of an affection which we know from experience may act as a starting-point . . . especially perityphlitis, a purulent focus, or an ulceration of the stomach, intestine," etc.

2. "Pain in the epigastrium, above the umbilicus, or in the right hypochondrium, or any other situation in which the pylephlebitis may start."

3. "Violent chills, which are repeated at irregular intervals, and are followed by great heat and profuse sweats, while the temperature in the intermission remains abnormally high (and pyemia in the ordinary surgical sense is excluded)."

4. "The recent, uniform, and painful enlargement of the liver. Enlargement of the organ is not constant, but tenderness is always present."

5. "Considerable enlargement of the spleen, especially when we can follow its development."

6. "The icteric color of the skin and urine in addition to the biliary diarrhea."

7. "Rapid emaciation of the body and profound loss of power."

8. "The occasional development of diffuse peritonitis and typhoid symptoms in the later stages of the disease."

Jaundice is said to occur in three-fourths of the cases by Von Schüppel. Eichhorst[1] says that it is almost always present, while in liver-abscess, not pyemic, it is one of the rarer symptoms. Rouis[2] found it to be present in 17 per cent. of the 258 tropical cases included in his statistics. Waring[3] found it in somewhat less than 6 per cent. of his cases. All observers note the violence of the chills. There is seldom time for the development of ascites or of enlargement of the superficial abdominal veins. Only one termination is known for the disease, and that is death. This occurs within two weeks as a rule; sometimes after five or six.

The abscesses of the liver are usually very numerous and small, from the size of a pin-head to that of a cherry, though they may reach a much larger size. The walls of the portal vein or of any contributing branches which may be involved are thickened, reddish or grayish; the intima is of a dirty gray, swollen, and at times much softened or completely broken down. The contents of the inflamed veins are described as ichorous, putrid, dirty-gray or reddish-brown fluid. The connective tissue adjacent is also frequently inflamed and infiltrated.

All abscesses of the liver were supposed by Budd[4] to be secondary to inflammation or ulceration somewhere in the digestive tract, as in dysentery, ulcer of the stomach, or proctitis. This theory,

[1] Ziemssen: Cyclop. of the Practice of Medicine, ix, 822 et seq.

[1] Specielle Pathologie und Therapie, 4th ed., 1890, ii, 452.

[2] Recherches sur les Suppurations endémiques du Foie, etc. Paris, 1860; p. 189.

[3] An Inquiry into the Statistics and Pathology, etc. Ed. John Waring, Resident Surgeon of Travancore, 1854, iii.

[4] Diseases of the Liver, 1853.

though for a long time received with hesitation (Flint,[1] Frerichs[2]), is gradually gaining ground, and is probably, in the main, correct. At the time of examination the original disease may not be present, or it may not be found, while the embolus, which was the means of transfer, has long before disappeared in the resulting abscess. Many of these cases of ordinary liver-abscess run a prolonged course, as is well known, and often give rise to little disturbance of the system. They either rupture spontaneously, or are drained by operation, with a resulting cure in a considerable proportion of cases.

Very different, however, is the clinical picture when from the same starting-point—an appendicitis, for example—the portal vein or its contributing branches become involved in a suppurative inflammation, as in the last case narrated. These cases all die (Osler, Eichorst, Von Schüppel), and die quickly, with symptoms of the most violent character. The abscesses which form in the liver are multiple, and before large areas have time to break down death occurs from septic intoxication.. It is not always that the inflammation spreads to the portal vein by continuity along a contributing branch, but a septic embolus may be the means, as in the tropical abscess. In each case the embolus traverses the same vessels. In the tropical abscess there is at some period abundant involvement of intra-hepatic portal radicles. What is the cause of the different result? It seems to me that it must be sought in the different characters of the infective material. There must be different ptomaïnes involved, probably different bacteria, so that in the one case a comparatively mild and circumscribed hepatitis is set up, and in the other an infective inflammation of all points of contact in liver and vein, which rapidly destroys life by a species of pyemia. It is these cases which are comparatively rare. An examination of late volumes of the *Index Medicus* will disclose from one to two cases per year reported as pylephlebitis, but seldom in American or English periodicals, the German predominating. For the same period the literature of ordinary hepatic abscess is enormous. References to some typical cases are given below.[3]

3727 CHESTNUT STREET.

Virchow on Cremation.—Virchow has written a letter to the Board of the Berlin Cremation Society that he considers cremation "very useful indeed with respect to economic as well as sanitary matters," especially in times of epidemic.

[1] Practice of Medicine, p. 604. 1880. [2] Loc. cit., p. 116.

[3] Sonnenfeld: Wiener med. Presse, 1885, xxvi, 1259. Colquhoun: Lancet, London, 1887, ii, 606. Aufrecht: Berlin. klin. Wochenschr, 1869, S. 308. Payne: Path. Trans., 1871. Many references to German and French sources are given in Ziemssen's Cyclopedia of Practice of Medicine, ix, 805.

REMOVAL OF THE DRUM-HEAD AND OSSICLES IN DISEASES OF THE MIDDLE EAR.

BY G. MELVILLE BLACK, M.D.,
OF DENVER, COL.,
PROFESSOR OF RHINOLOGY AND LARYNGOLOGY IN THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF COLORADO;
EX-HOUSE-SURGEON TO THE MANHATTAN EYE AND EAR HOSPITAL, N. Y.

THE operation of removal of the drum-head and ossicles, which has been popularized in this country by Dr. Sexton, of New York, has, as to its feasibility, been a source of contention among otologists since Dr. Sexton commenced advocating it as a means of benefiting certain otherwise incurable cases of suppurative and non-suppurative disease of the middle ear. That this should be the case is not at all unnatural, as a great number of our conservative men will not recognize new procedures of this kind until their thorough investigation by others, and oftentimes not then until they are compelled to do so or be denominated as "behind the times."

During the past year a number of articles, for and against this method of treatment, have appeared from the pens of prominent otologists all over the country, with the publication of cases which swell the number reported to quite considerable proportions. The operation is a rational procedure, especially in suppurative disease of the middle ear.

In the non-suppurative forms the indications for operative interference are not quite so favorable. My personal experience in the form last mentioned has been with cases in which little or no benefit could otherwise be expected. The cases selected were far advanced—so much so that the round window of the labyrinth had undergone calcification and the stapedial articulation with the oval window was ankylosed, and intra-labyrinthine changes no doubt had taken place.

The operation does not involve any danger to life, and in my experience there is no tendency to suppuration after healing has taken place. It would naturally be expected that, owing to the exposure of the tympanic cavity to the influences of the atmosphere, there would be a tendency to inflammatory exacerbations, but such does not seem to be the case. The operation itself is a delicate one, requiring a special set of instruments, devised by Dr. Sexton, and a good light. A general anesthetic is necessary.[1]

The removal of the transmitting mechanisms, which had long since ceased to perform their functions in the cases reported, did not materially improve the hearing, because the oval and round windows of the labyrinth were not sufficiently free from disease to transmit the sound-waves, which now

[1] For a full description of the operation, see Sexton, "The Ear and Its Diseases," page 385.

came directly to them instead of by way of the drum-head and ossicles.

The object of this operation, then, is to remove a transmitting mechanism that, from its diseased condition, has become an obstruction, and to allow the sound-waves admittance to the labyrinth without interruption. In the suppurative variety of disease —especially that form denominated "attic," *i. e.*, when the upper portion of the atrium (drum-cavity) is the part diseased, the perforation in the drum-membrane being above the short process of the malleus, and which has a special fondness for being extremely chronic—this operation is of the utmost value, not only stopping the discharge but greatly improving the hearing.

In this variety, as well as in all chronic suppurative diseases of the middle ear which do not improve under the usual methods of treatment, dead bone is the cause of its chronicity. The body of the malleus and the whole of the incus are very liable to necrosis in "attic" suppuration, owing to poor drainage and inability to cleanse thoroughly. The disease progresses indefinitely, with short intervals of remission, during which the patients think they are well, but soon their hopes are dashed to the ground by a recommencement of the discharge.

A chronic discharge from the middle ear is always a dangerous affair, although the profession often regards it lightly, and the patient gets used to it and considers it more of a nuisance than anything else. There is a possibility of an acute inflammation being set up at any time, and if the drainage is not good or if the mastoid antrum is in a chronically inflamed state, the acute inflammation is very liable to extend, and mastoiditis result. We all know what mastoiditis means. Therefore if any means is at hand by which these otorrheas can be permanently cured, it is worthy of our consideration. I publish these few cases with a view of placing them on record for what they are worth, and to enlist myself among others engaged in this work. I am in hopes of being able to publish at some future time cases operated upon for non-suppurative disease of the middle ear in which the process had not extended to a point beyond all hope of improvement, and to be able to show by the increase of hearing the value of this procedure.

Mrs. J. H., aged twenty-four, came to me July 8, 1891. When eleven years of age she had suppuration of the cervical glands. About twelve years ago she became deaf in the right ear, and there soon followed a discharge, but no pain at any time. She has been under the care of a number of competent otologists at different times, but has only been relieved, never cured.

The watch was heard by the right ear only when pressed againt the auricle, and by the left ear at a distance of four inches. A middle C tuning-fork was heard better by bone-conduction than by aërial conduction. A hole about 2 mm. in diameter existed in the drum-head above and slightly posteriorly to the short process of the malleus, in what is known as the membrana flaccida. A granulation was protruding from this perforation. The discharge was very free, and extremely offensive. I advised removal of the drum-head and ossicles at once, but she preferred having me try other treatment first. I touched the granulation protruding from the perforation with chromic acid, and ordered syringing and inflation of boric acid into the external auditory canal twice daily. This she continued for several weeks; but seeing no improvement, I instructed her to keep up the syringing and to instil into the canal, three times a day, twenty drops of a 5 per cent. solution of styrone in dilute alcohol, and to report to me in a week. After a fair trial of this, with no improvement, I discontinued it. I then tried the tympanic syringe and instillation of a 5 per cent. solution of hydrochloric acid once daily.

None of these agents in any way served to lessen the discharge or to moderate the odor. She now consented to the operation, which I did under chloroform, removing the drum-head and malleus and what was left of the incus, this being almost entirely destroyed by necrosis. The head of the malleus was also necrotic. The upper part of the annulus tympanicus and the upper portion of the tympanum were necrotic. I scraped these necrotic parts with a sharp curette. After cleansing and drying the tympanum, I blew into the cavity some powdered aristol. She had some pain in the ear and dizziness for the following three days. The cleansing and boric acid were continued for two weeks, when it became necessary to cauterize a few granulations hanging from the upper part of the tympanum at the site of a former dead bone. She had become quite expert in treating her own ear, and could cleanse it and use the boric acid as well as I could. She kept up this treatment for some six months, coming to see me every week, it being necessary to cauterize the granulations in the upper part of the tympanum about this often, as there was evidently dead bone there which caused them to form. At the expiration of this time the granulations, discharge, and odor had ceased, and the tympanum was dry and healthy. A hole about 4 mm. in diameter remains in the drum-head. She has had no recurrence of her trouble up to the present time, and will not have, as the cause does not now exist. Hearing is not improved.

Mr. J. S. M., aged eighteen, came to me December 10, 1891. About ten years ago he was vaccinated, and as a result he was quite ill for several days. Following this his right ear began to discharge, but this was not attended with any pain. The discharge had continued up to the present time, with periods of intermittence, during which he was pronounced cured by his attending physician, under whose care he was for about four years.

The watch was heard by the right ear on contact with the auricle, and forty inches distant by the left ear. A large perforation of the drum-head existed above the short process of the malleus, in the mem-

brana flaccida of the right ear; the discharge was scanty and very offensive. An operation was advised without delay, as I did not think I should be any more successful in curing him by local applications than the otologist who had previously treated him. As he was attending school, and the holiday vacation was drawing near, the operation was postponed until January 2d. On that date he came prepared for the operation, complaining, however, that the ear had been somewhat sore for the past few days. Upon examination I found the canal filled with caseous pus. After removing this, it was found that the drum-head was entirely absent, and the tympanum was very red and granular. I postponed the operation and ordered the ear syringed twice daily, the patient to report in two days, which he did. The condition was found to be somewhat improved. He was ordered to keep up the syringing and report in a week. At the end of this time the tympanum was assuming a more healthy appearance. The malleus could be plainly seen hanging down from above, with a remnant of drum-head on each side of it. On January 17th, the operation was performed under chloroform. The attachments of the malleus being severed, the bone was grasped with a pair of Sexton's forceps, but it crumbled under the pressure. It was removed piecemeal. The incus was not to be found, having become absorbed or thrown off with some of the previous discharges. Necrosed bone was found in almost all parts of the tympanic cavity; the latter being scraped with a sharp curette, until no more rough spots could be found with the probe. A small quantity of aristol was blown over the raw surface, and the canal was closed with cotton. For about ten days he was very dizzy, but at the end of this time he was allowed to return to school. The discharge had been quite free, but it had no odor. The ear was syringed twice daily. The syringing was continued, with inflation of boric acid, for several months. An occasional granulation would present itself, which would require touching with chromic acid. He was discharged last June, cured. The tympanum was dry, all the parts had healed, and there was no discharge. Hearing was not improved.

D. L., aged twenty-five, came to me February, 1892. About eight years ago, while in London, Eng., he commenced having ringing noises in the ears, and some deafness. He was treated in the Metropolitan Ear and Throat Infirmary, and the Westminster Hospital for about two years, but without improvement. He came to Colorado five years ago, and was under the care of an otologist in Denver for some time, but received no benefit. He has never had any discharge from the ears.

The patient could not hear the watch, except when pressed very hard against the right ear, and not at all by the left. He could hear the snapping of finger-nails by the right at a distance of eight inches, but this was not heard by the left. Voice was heard by the left when very close, but he could not understand what I said. Hearing was very much better in a noisy place. The tuning-fork was heard better by bone-conduction. The drum-heads were sunken and opaque. The light-spot was absent on the left from want of polish. I explained to him that I could not help him by treatment, and could only offer an operation as a possible means of benefit, although this was not encouraging. He finally agreed to have me operate on the left ear, which I did on March 18th, under chloroform. No after-treatment was instituted except cleansing. This I found necessary, owing to a sero-mucous discharge, which finally became purulent. At the end of a week he returned home, which was some distance from the city. He was instructed to keep the ear clean and to report to me in a week. The drum-head finally healed, this being contrary to what we desired. I made a good large hole in it with sulphuric acid. It continued to show a disposition to heal over again, but I prevented this by painting the margins of the perforation with trichloracetic acid. By June, 1892, the tympanum was dry, with a permanent opening through the drum-head. The amount of benefit was very small. He can now understand what is said to him when the mouth is within six inches of the ear, speaking in a normal tone of voice. This he could not do at any distance before the operation, no matter to what extent the voice was raised. He hears the snapping of finger-nails at one inch distant. Before the operation he could not hear the snapping at all.

M. A. C., aged thirty-three, came to me January 27, 1891. Thirteen years ago he had "nervous prostration," was dizzy, and had a tendency to fall forward during one of these dizzy spells, which came on several times a day, especially after any exertion or excitement. He came to Colorado in 1882. He began to improve shortly after arrival, with gradual cessation of the dizzy spells, until within the past four years he has had none at all. He noticed, about three years ago, that the hearing of the right ear was becoming defective, and was attended with tinnitus. This tinnitus, as well as the deafness, has gradually become worse, until it is now almost unbearable, especially at night—a restful night being almost impossible. He does not have any tinnitus in the left ear, but thinks the hearing is not as good as it might be.

The watch is not heard by the right ear. The snapping of finger-nails is heard at one and one-half inches distant. The watch is heard by the left ear at a distance of six inches. The tuning-fork is heard by both ears, better by bone-conduction than by aërial conduction. With the tuning-fork placed upon the teeth or cranial vertex, in the median line, it was heard equally well by both ears. The right ear heard the tuning-fork by bone-conduction twenty-seven seconds, and ten seconds by aërial conduction. In the left ear the time was eighteen seconds by bone-conduction, and thirty-two seconds by aërial conduction. The throat and nose are in fair condition.

Both ears were treated by the introduction of camphor and iodin vapor through the Eustachian catheter into the middle ears; moving the drum-head and ossicles by the use of Siegle's otoscope; and by politzerization. An application of compound tincture of iodin and glycerin, equal parts, was made to the post-nasal space. This treatment was, for two

months, faithfully carried out each day, with the introduction of the Eustachian bougie every third day. There was no improvement of the right ear. The hearing improved in the left ear to twelve inches for the watch.

I advised removal of the drum-head and ossicles of the right ear, to relieve the tinnitus, which was so distressing that he was able to sleep but little.

On March 28th I removed the drum-head, the malleus, and the incus bones. (In all these cases I have left the stapes intact, disarticulating it from the incus before removing the latter.) The healing was slow, there being considerable muco-purulent discharge for two weeks, when the drum-head began to heal over very rapidly. Its edges were touched with trichloracetic acid several times, which produced considerable reaction. The tympanum filled with granulations, which were destroyed with chromic acid. From this time on the progress was rapid, the tympanum soon becoming white and dry, with a good hole in the drum-head.

Hearing for the watch was increased from nothing to contact, and for the snapping of finger-nails from one and one-half inches to twenty inches. The voice before the operation could not be heard, except as a jumbled noise, but after the operation a conversation could be carried on at a distance of one foot. Tinnitus was only partially relieved. I saw him last about June 1st. It is possible he may be still more relieved of the tinnitus by this time, but I am sorry to say I have lost track of him, and, in consequence, cannot say.

E. W. P., aged fifty-nine, came to me March 3, 1892. He thinks the trouble in his right ear dates back about thirty years, and in the left about twenty years. Thirteen years ago he was under the care of Dr. Jones, of Chicago, for several weeks, and nine years ago was treated by the late Dr. Wilson, of this city, for about a year. The benefit received from previous treatment was very slight and only temporary. He has had no tinnitus for three years. Hearing is much better in a noisy place. He has never had any discharge from the ears.

The watch is not heard by either ear. Snapping of the finger-nails is not heard by the right ear, but at a distance of one inch by the left ear. The voice is heard only as a jumbled sound by the right, conversation at a distance of two inches by the left. The tuning-fork is heard better by bone-conduction. The drum-heads are sunken and very opaque, and without a light-spot.

I told him that treatment would be of no value, and that removal of the drum-head and ossicles might benefit him slightly. I suggested a trial on the right ear, and, if the improvement was enough to amount to anything, to have the left ear operated upon.

Under chloroform-anesthesia, the drum-head, malleus, and incus were removed. The healing process went on nicely, no special amount of reaction following the operation. A muco-purulent discharge continued for about two weeks, when the drum-head showed a tendency to heal over. To prevent this I touched the edges of the perforation with trichloracetic acid. This produced some reaction and additional discharge. It was necessary to repeat the application of the acid several times before a permanent opening in the drum-head was established.

By May 15th, the tympanum was dry and white, with a good hole existing in the drum-head. The improvement in hearing was not great, yet it was something. He hears the snapping of finger-nails at a distance of one and one-half inches. This sound could not be heard at all before the operation. A conversation can now be carried on in a moderate tone of voice at one-inch distance. There has been no change in his hearing from May 15th to the present writing.

A PATHOLOGIC CLASSIFICATION OF HIP-DISEASE.

By JAMES K. YOUNG, M.D.,
of Philadelphia,
Instructor in Orthopedic Surgery, University of Pennsylvania; Attending Surgeon, Orthopedic Department, University Hospital, etc.

The pathology of tuberculous joint-diseases has received so much attention of late that a practical classification of hip-disease upon a pathologic basis is now feasible and should prove of the greatest clinical value.

So far as I know, no attempt has been made to formulate, upon a purely pathologic basis, the different types of the disease as seen clinically. All former classifications have been upon an anatomic or symptomatic basis.

Some writers, as Ashhurst,[1] have made an anatomic division into femoral, acetabular, and arthritic coxalgia; while others, as Gibney,[2] place all the varieties under one general title of chronic osteitis of the hip-joint, and Lannelongue,[3] under that of coxotuberculosis. The clinical classification of Lovett[4] is the most comprehensive, and, while not purely pathologic, rests upon a pathologic basis.

Four well-marked types are given: (1) the destructive; (2) the painful; (3) the quiet or painless; and (4) the transient or ephemeral forms; each of which, he says, corresponds to a peculiar type of the pathologic process. To this article I am indebted for much valuable information in the preparation of this paper.

In discussing this paper before the Orthopedic Association, Roswell Park[5] suggested a classification into a chronic, a fibroid, a septic-infectious (pyogenic), and a mixed form.

My object is to offer a classification upon a pathologic basis, illustrated by clinical facts, and intended to show that the tuberculous process in the hip-joint is identical with the tuberculous process in

[1] Pract. of Surgery, 2d ed., p. 588.
[2] Diseases of the Hip, p. 170.
[3] Coxotuberculose, p. 3.
[4] Bost. Med. and Surg. Journ., Oct. 13, 1892.
[5] Trans. Amer. Orthop. Assoc., p. 68.

the lungs, and that the pathologic classification adopted by clinicians to describe pulmonary tuberculosis is best suited to the use of surgeons in their study of tuberculosis of the hip joint.

Such a classification is of the greatest importance, for upon it depends the early adoption of appropriate treatment. If, moreover, the different types could be early recognized, much valuable time and many useful lives might be saved. If, for example, a tuberculous synovitis of the fibroid type be early recognized, conservative treatment might be instituted and a resection be positively avoided; or, if the destructive nature of the acute tuberculous type be early recognized, the prospects of recovery would be enhanced by early resort to a typical or atypical resection.

Pathology is the basis of clinical surgical diagnosis, and a classification upon this basis is not only feasible but highly essential to the proper study of this interesting morbid affection. Clinical surgical pathology gives us the cue to the lesions which are associated with the various symptoms. It is not sufficient to diagnosticate a chronic tuberculous osteitis of the hip-joint; the anatomic structures involved should if possible be ascertained, and also the type of the disease.

From careful study, extended research, and clinical observation I am convinced that the best results in the pathology of hip-disease will be accomplished by a comparison with the analogous lesion that occurs in the pulmonary organs; and if this presentation of the subject lighten the labor of students in acquiring a knowledge of this affection, or if it serve others in a more accurate study of this disease, the object for which it was written will have been accomplished.

Clinical observations show that hip-disease has three modes of origin: In the head of the femur, the acetabulum, or in the structures of the joint, the synovial membrane, ligamentum teres, or the cartilage lining the acetabulum or covering the head of the femur, *i. e.*, a femoral, acetabular, or arthritic origin. It exhibits itself in three different groups: (1) the acute tuberculous form (miliary); (2) the chronic ulcerative form; and (3) the chronic tuberculous form (fibroid), corresponding with the manifestations of tuberculosis in the lungs, the acute miliary tuberculosis, chronic ulcerative, and fibroid phthisis, respectively.

Origin:

1. Arthritic.
2. Femoral.
3. Acetabular.

Types:

1. Acute tuberculous form (miliary).
2. Chronic ulcerative form (pyogenic-miliary).
3. Chronic tuberculous form (fibroid).

The primary osseous origin of hip-disease has been fairly established for some time, though authors differ greatly as to the relative frequency of femoral and acetabular osteitis. The primary origin in the synovial membrane and ligamentum teres has, in my opinion, been established since the report of the well-known case of Willard and Shakespeare,[1] notwithstanding the criticism made by Gibney, that the patient had been under efficient treatment and the osseous changes may have been retrogressing.[2] If any doubt exists as to primary synovial tuberculosis, or primary tuberculous chondritis, a careful perusal of Senn's[3] recent magnificent contribution to clinical surgical pathology should dissipate it.

According to the mode of infection there are two distinct forms of initial lesion, the osseous and the synovial.

a. When the bacilli, through trauma of the osseous structures, become localized in the head of the femur or in the acetabulum, the rapid proliferation of cell-division proceeds, and produces in a few days gray miliary nodules. According as the number of bacilli is large or small, and the tissue-soil favorable or unfavorable, will be the development either of a general or a localized tuberculosis, and the ultimate termination of the process, whether of caseation, ulceration and destruction, or sclerosis, constriction, and healing.

b. When tubercle-bacilli, through trauma of or invasion by extension into the soft structures, become localized in the synovial membrane or the round ligament, or are absorbed by the cartilage from the perichondrial bloodvessels, the aspect differs. The synovial membrane becomes rapidly and extensively affected; the process is not confined to a constricted area, but has a more general distribution, and may involve the greater part of the synovial membrane or the entire articulation. In this mode of infection we see the characteristic *fungous synovitis* and the areas of the so-called pedunculated papillomatous growths. These growths, with caseation, ulceration, and abscess-formation on the one hand, and sclerosis and limitation on the other, make up a comprehensive picture of chronic tuberculous osteitis.

These being the tendencies of the tuberculous processes, either toward destruction or healing, the ultimate result will depend upon the ability of the tissues to restrict and limit the development of the bacilli. As Osler[4] has aptly put it: "There are tissue-soils in which the bacilli are, in all probability, killed at once—*the seed has fallen by the way-*

[1] Agnew's Surgery, vol. ii, p. 168.

[2] Boston Med. and Surg. Journ., 1880.

[3] Senn: Tuberculosis of Bones and Joints, 1892, pp. 132 and 147.

[4] Practice of Medicine, 1892, p. 196.

side. There are others in which a lodgment is gained, and more or less damage done; but, finally, the day is with the conservative, protecting forces—*the seed has fallen upon stony ground.* Thirdly. there are tissue-soils in which the bacilli grow luxuriantly; caseation and softening, not limitation and sclerosis, prevail, and the day is with the invaders—*the seed has fallen upon good ground.*"

The *acute tuberculous* form is a destructive form of hip-disease, due to a florid tuberculosis of bone or synovial membrane, and rapidly fatal from tuberculous meningitis.

The *chronic ulcerative* form is the ordinary form of hip-disease. Tuberculous from the first, it becomes ultimately a septic-infectious form from the formation of numerous abscesses and the presence of the streptococci and staphylococci aurei. It frequently terminates fatally from albuminoid degeneration.

The *chronic tuberculous* form is a slow, painless form, with little tendency to abscess-formation, and tending toward a spontaneous cure.

1. *The Acute Tuberculous Form.*—This type of hip disease is the analogue of acute pneumonic tuberculosis, commonly known as galloping consumption. It occurs in both children and young adults, with inherited tendency and slight resistance. Two types may be recognized—a synovial and an osteitic.

a. In the synovial variety the onset is abrupt and acute, and usually in an individual who has previously enjoyed good health, although in many cases there may be a history of exposure to cold or traumatism. If the fungous granulations are scanty there is copious effusion, *tuberculous hydrops*, marked fluctuation, slight deformity, severe pain, and normal temperature. The condition may terminate at this stage or may become a fungous synovitis.

If granulation-tissue be abundant, there is little or no effusion in the joint, slight or no fluctuation, extensive deformity, without much suffering, and with slight fluctuations of temperature from the norm. Suppuration may occur in the granulations, and pus may accumulate in the joint until the capsule is ruptured and general infection occurs, or a spontaneous or artificial opening exposes the individual to infection with pus-microbes from without, with rapid impairment of the general condition, pyrexia, hectic, and progressive anemia and emaciation.

b. In the osteitic variety the commencement is likewise sudden in persons debilitated from acute infectious diseases, or from any cause. Pain initiates the attack, and is a prominent symptom throughout the disease. Localized tenderness on pressure is early present, and is one of the most positive indications of osteo-tuberculosis. There is little swelling or edema, until the para-periosteal structures become infected. Then the para-articular tissues become markedly indurated, and abscess-formation rapidly occurs. Muscular spasm, deformity, and atrophy are extreme. The pyrexia runs high, and the general condition rapidly deteriorates. The destruction is rapid, and death may occur from exhaustion, tuberculous meningitis, or, if the disease drags itself into the chronic ulcerative form, from amyloid degeneration.

While the disease is confined to the articular structures, it is a pure, florid, rapid tuberculosis; but when ruptured abscesses and sinuses expose an exquisitely prepared tissue-soil to atmospheric infection, suppurative microbes inaugurate a local septic process, and finally a pyemia.

2. *The Chronic Ulcerative Form.*—Under this heading may be grouped the great majority of cases of hip-tuberculosis in which the lesions proceed to ulceration and softening, and ultimately produce the well-known picture of chronic hip-disease.

A purely tuberculous affection from the first, it ultimately becomes in many cases a mixed disease, many of the most prominent symptoms of which are due to purulent cavities and septic infection. The initial lesion in the majority of instances is an osseous one, either in the epiphysis of the femur or in the acetabulum, in the majority of the cases being, in my opinion, in the former situation, notwithstanding Habern's statistics.[1]

The onset is gradual, and its progress is characterized by three well-marked stages: the first, from the onset to the formation of pus within the joint; second, from the end of the first until pus appears outside the joint; and third, from the second to the end, the period of *flexion*, *abduction* and of *adduction*, or *shortening*, respectively, which is practically identical with the division of Adams and Wright.

Pain, muscular spasm, atrophy, lameness, malposition of limb, induration about the trochanter, changes in the outline of the region of the hip, lordosis of the lumbar spine, are all well marked and characteristic. Muscular spasm, and night-cries or pains, are prominent symptoms of this variety. Indeed, this variety may be said to correspond to the painful form of other writers. Suppuration occurs in a large proportion of these cases, the relative frequency being much modified by appropriate treatment.

Exacerbations are common, and, but for exhaustion from prolonged suppuration, the prognosis of a favorable termination is better than in the former variety, or in some instances of the type about to be described.

3. *The Chronic Tuberculous Form.*—This group includes a class of cases which, while not common, are sufficiently numerous to form a well-recognizable type. The onset is gradual, and the progress

[1] Cent. f. Chir., April 2, 1881.

of the disease slow. Muscular spasm is an early and constant symptom, fixing the limb rigidly in the majority of instances. In a few, particularly when there has been much shortening, there may be great mobility without pain.

The local sensibility is not increased, and pain as an important symptom is absent. Night-cries may be present, but are insignificant. Muscular atrophy and shortening are the prominent characteristics. Abscesses seldom occur, but when present are accompanied by extreme shortening of the limb, and in some instances entire destruction of the head of the femur. The tendency is toward recovery, with great shortening, extreme atrophy, and firm, fibrous ankylosis.

This form may come on gradually as a sequence of a chronic ulcerative tuberculosis or a tuberculous synovitis. The condition is one of sclerosis and induration, with gradual shrinkage, from the superabundance of fibrous tissue, the tendency of the pathologic process being conservative and healing. If the initial lesion be in the synovial membrane, effusion is slight, granulations are scanty, but fibrous ankylosis is marked and extreme; if in the osseous structure, the limitation of the tuberculous foci is effected by a condensing osteitis, and the tendency to purulent degeneration is reduced to a minimum. When pain or night-cries occur, they are usually due to involvement of the synovial membrane by the extension of the disease from the epiphysis.

These three groups include all cases of true hip-disease. Several forms of arthritis have been placed under this title which do not, in my opinion, belong there. Acute arthritis in infants and acute pyogenic arthritis in adults from typhoid fever, sepsis, etc., do not naturally belong in this category.

The transient or ephemeral form, of which I have observed a few instances since attention was attracted to the subject by the interesting observations of Lovett and Morse[1] appears to me to include cases of the acute tuberculous form which have rapidly and spontaneously recovered. I have now two such cases of the acute tuberculous form under observation, in which all the symptoms have entirely disappeared.

Exothyropexy is the name proposed to designate an operation in which the thyroid gland is freed as thoroughly as possible from surrounding parts and brought forward through the external wound, being permitted to undergo atrophy. It has been performed by JABOULAY (*Lyon Médical*, an. xxv, t. lxxii, No. 11, p. 380) in the case of a young man of fifteen years, with a goiter that threatened suffocation, and in which entire removal of the gland was not permissible.

[1] R. W. Lovett and J. L. Morse: "A Transient or Ephemeral Form of Hip-disease," Bost. Med. and Surg. Jour., Aug. 18, 1892.

CLINICAL LECTURE.

REMARKS ON A CASE OF TUBAL PREGNANCY.

BY WILLIAM GOODELL, A.M., M.D.,
PROFESSOR OF GYNECOLOGY, UNIVERSITY OF PENNSYLVANIA, ETC., PHILADELPHIA.

I AM going to take our patient with extra-uterine fetation, upon whom I operated a week ago before you, as a text for some remarks, which I was unable to make at the time of operation. As the operation was a critical one, it engaged all my attention, and I could not give you at that time a coherent lecture on a very important subject.

Let me say, however, before going further, that she has made an uninterrupted recovery; and notwithstanding the large cavity from which a dead child at full term was extracted, and which communicated with the abdominal cavity, no symptoms of blood-poisoning set in. I put in a piece of iodoform-gauze as large as a pocket-handkerchief, which was partly removed at the end of the fourth day, and the rest on the fifth day, when a drainage-tube was inserted. This has been reduced gradually, until now it is only two inches in length, and there will be cut off from it to-day another half-inch, which shows how much the cavity has filled up. A drainage-tube should never touch bottom in abdominal work, else it may ulcerate through the rectum or through any other bowel on which it rests. The cavity is only about two inches deep, and it apparently has been filled up laterally by the processes of nature. There is scarcely any color to the secretion, and although there is no doubt some pus, it is so little as not to be visible.

Her case, then, will be my text. The late Dr. Formad, who was Coronor's Physician, had in the course of four years over thirty cases of autopsy on women who had died suddenly. There would be the history of a woman washing at the tub, or cooking, or lifting some weight, when suddenly she was seized with pain in the abdomen, followed by collapse, in which she would die. At the inquest there was found in all of these cases tubal pregnancy with rupture of the tube. At about the eighth week any slight strain will rupture the pregnant tube. One of my patients had just got out of bed, and was lacing her shoe, when she had severe abdominal pain and collapse. A hurried abdominal section saved her life.

Let us begin at the beginning. The usual history is this: A woman has been married for a long time without conceiving. For instance, our patient had been married seven years, and this was her first conception. Or a woman has given birth to one or two children, then remains sterile for a number of years before she conceives again. That is the usual history, but there are exceptions.

What are the symptoms? A woman will usually miss a monthly period, and on that account deem herself pregnant. Then other symptoms will set in which will confirm her in that opinion, such as enlargement of the breasts, the usual changes in their areolæ, and nausea. But after the lapse of a few weeks colicky pains come on, an irregular hemorrhage takes place, a decidual cast is thrown off from the womb, and she will think, and her physician also, that she has had a miscarriage.

Why is this? It is because the womb, sympathizing, when tubal impregnation occurs, forms a decidua, and always enlarges. The decidua is sometimes cast off as a whole, or it may come away in large pieces, or, still more frequently, in shreds. A few days later, while engaged in any household duty demanding some muscular strain, she is seized with violent pain and collapse, and her physician is sent for. Believing the case to be one of cramp-colic, he gives her morphine, etc., yet to his surprise she gets no better, and dies. Sometimes these attacks are repeated before a fatal collapse takes place. I should say, then, that the most common symptoms of extra-uterine pregnancy are, first, the missing of a monthly period; second, severe colicky pains; third, irregular hemorrhages. Irregular flows of blood when the woman is supposed to be pregnant, would always lead me to think that something wrong is going on.

Now, as to the cause of extra-uterine fetation. To answer this question we must ask another one. Where is the egg fecundated? Is it inseminated in the womb; is it fecundated in the tube, or is it fructified in the ovary? These are difficult questions to answer. But I should judge from the evidence on this point, that the ovum is usually fecundated either just as it is about to escape from the ovary, or while in the oviduct on its way to the womb. For just as soon as the ovum is fecundated preparations are apparently made beforehand by the womb for its reception. In the tubes there is ciliated epithelium, little hair-like projections, which are always waving to and fro. The spermatozoa have their own independent movement, and can wiggle up to the ovum and impregnate it; but the ovum has no independent means of locomotion, and depends on the movement of the cilia to carry it to the womb. The ovum, so to speak, is tossed from one cilium to another, as a foot-ball is tossed from one player to another, and thus is conveyed from the ovary to the womb. But suppose the woman has had a catarrh of the tube, a salpingitis, due to gonorrhea or to some other cause. It then becomes denuded of its cilia; the mucous membrane grows thick and unyielding, and consequently the spermatozoa may wiggle their way to the ovum and fructify it, but the latter then cannot get to the womb. Hence it stays in the tube, and there develops.

Now arises another difficult question. Is the ovum ever fecundated in the ovary itself—in other words, do we ever have ovarian pregnancy? This is one of the moot questions of the day. There are a few specimens that seem to confirm the theory of such an origin. It would appear that just as the ovisac had burst, and the ovum was ready to escape, it may have been fecundated and fixed there, the ovary becoming its nest. There are two or three such specimens, but they are not conclusive, and the general opinion is against ovarian pregnancy.

What is the history of tubal pregnancy? For we now call it tubal pregnancy, instead of extra-uterine pregnancy, as we did when we thought the ovum might become impregnated in the ovary or in the wall itself of the uterus—tubal, whether the ovum is outside of the womb, or is interstitial, because it tells the story of tubal origin. Now, this tube is small and its growth does not keep pace with that of the ovum; so that usually at the sixth or eighth week it bursts, and the result depends upon where it bursts. Suppose my arm stretched out horizontally to be the tube, and this towel hanging over it to represent the broad ligament. Now, if the tube bursts above in its free portion, where the peritoneum, represented by this towel, is closely applied, there is nothing to prevent fatal hemorrhage taking place into the cavity of the abdomen, for there is nothing to stop it, unless the opening becomes corked by a fibrinous clot, or by a piece of placenta. Yet, this accidental arrest is rare, and the most common result is a fatal hemorrhage, unless we interfere, and that most promptly. But if it bursts below, between the two folds of this towel, *i. e.*, of the broad ligament, the blood escapes into a shut sac, and the hemorrhage cannot exceed the capacity of this sac. The blood for a certain distance will dissect apart the folds of the broad ligament, even down to and around the rectum, but no further. These are the cases in which the child may go on to term. The child escapes into the broad ligament, where it usually soon dies, but sometimes it lives and goes on to term. It is sometimes very important to decide whether the tube has ruptured on its free surface, and the blood is flowing unchecked into the abdominal cavity; or whether it has ruptured into the closed sac of the broad ligament where the hemorrhage will soon be controlled. This information can generally be gained by a rectal examination, which will show a constricting ring when the broad ligament is involved.

What is the after-history of these cases? If the woman is allowed to bleed on indefinitely, of course she dies. If she has a physician who, keenly alive to her dangerous condition, will at once make an abdominal section, ligate the tube and remove it, she will most probably get well. Her chances are excellent unless she is moribund, and even then it is our duty to perform the operation, for women apparently dying from the loss of blood have been saved. It is only within the last few years that we have been acquainted with the pathology of ectopic pregnancy, and have been awakened to our duty.

What is the history if the child dies, and the little tear in the tube is closed up by a clot, which arrests the hemorrhage? The placenta, strange as it may seem, often goes on growing, even when the child is dead, and there may be a second rupture of the tube from this growth, followed by a fatal hemorrhage. Therefore, in all suspected cases of tubal gestation, one should operate. As a broad rule, when a physician examines a woman, and finds on one side of the womb a tumor disconnected from the womb, and if in the series of symptoms there is a suspicion of extra-uterine fetation, it is his duty, if the woman's life is in danger, to make an exploratory incision.

What happens when the child does not die, but lives? For sometimes, as in our case, the child will survive the rupture of the tube, live, and go to term. The abdominal pains cease, and the symptoms will be those of a natural pregnancy. The placenta, however, becomes unnaturally large, so as to compensate for its less vascular site. In natural pregnancy the placenta has a limited area, because it is lodged on an erectile tissue largely supplied with sinuses. But when the placenta is ectopic—that is to say, out of its proper place in the womb—it is lodged on tissues non-erectile and less vas-

cular than those of the womb. Hence, it spreads over a larger area of surface, which, not being contractile, causes a terrible hemorrhage when efforts are made to remove it after a celiotomy. In our own case, although the child had died six months ago, the placenta was very large.

Now, what happens to the child? It lives until it reaches the natural period of utero-gestation—viz., nine months—and then it dies. Why it dies then is a mystery. One of the early physicians who flourished some 400 years ago, on being asked what brought on labor at the end of nine months, replied: "The grace of God." He didn't know why, and neither do we, with all our accumulated science. We have our theories—we may say that the womb cannot increase any more—but how is it that the child outside of the womb dies at about the ninth month? That's a poser; we don't know.

What occurs on its death? Of course, all fetal movements cease, and very generally the woman's health begins to fail from chronic septicemia. This comes from the absorption of the liquor amnii, which becomes, if not exactly putrid, at least necrotic, and, therefore, septic. She loses flesh, and slight fever sets in, hectic in type. She may waste slowly away, or she may get over it and recover her health, as our patient did. This depends on what happens to the fetus. If the fetus becomes putrid, the woman may die in a few days, or an immense abscess may form in the sac, with recovery at last. Sometimes the fetus is converted into adipocere, and remains innocuous in the woman's belly for many years. This adipocere is not unlike that of bodies buried in certain soils. We have such a graveyard in Philadelphia. Bodies buried in it, in a few years become converted into adipocere, and do not decompose. One of these bodies is now preserved in the College of Physicians.

Sometimes the fetus is converted into a lithopedion—which means a stone-child. There is a curious and unaccountable tendency of uterine bodies to become calcareous. For instance, an interstitial fibroid tumor of the womb may undergo calcareous degeneration, and be converted in time into a species of stone, very like brain-coral. Again, you will not have been in practice a year before you will deliver a placenta gritty with concretions of lime. Sometimes this calcareous deposit is so great as to detach the placenta, causing hemorrhage and miscarriage, just as from fatty degeneration of the placenta. Then, again, a lithopedion may occur after a missed labor. This usually happens when the womb is bicornate, pregnancy taking place in one horn, or it may be in both horns. The child in one horn may be retained and never be delivered. It then is liable to be converted into stone.

A child can never be born whole, in case of extra-uterine fetation, without the intervention of the surgeon. I say *whole*, because it may be spontaneously discharged piecemeal through the formation of an abscess. But before describing the operation, let me go back and ask whether we can destroy the life of the ovum safely without the knife? The burning question for the last few years has been this: A tubal pregnancy having been diagnosticated, are there any means by which we can destroy the fetus in the first few weeks of its existence, and thus prevent rupture and its accompanying hemorrhages? Electricity has its advocates. I have no doubt whatever that electricity has accomplished this; and my advice to those of you who are not surgeons, and who cannot get the patient to a surgeon, is to try electricity, and see whether you can, either by the galvanic or by strong interrupted currents, destroy the life of the fetus. Such cases have been reported. The only doubt that has arisen is as to the accuracy of the diagnosis; but I feel confident that some of the cases were *bona fide* cases of tubal pregnancy, as the judgment of those reporting them cannot be doubted. In those cases not only was the fetus killed, but the growth of the placenta was arrested, by the galvanic current. So, if anyone near and dear to me had extra-uterine pregnancy, while I would prefer infinitely the use of the knife, yet I should place electricity second to the knife.

The objection to electricity is this: suppose you destroy the life of the fetus; the ovum may break down and give rise to the formation of an abscess, which is a dangerous complication. Again, if you destroy the life of the fetus, you leave a foreign body in that tube, which will become adherent to the ovary on that side. The woman then has all the discomforts of an adherent appendage, and she most likely will never be a sound and healthy woman afterward.

An effort has been made to destroy the child by the removal of the liquor amnii, or by the injection of morphine, or of other poisonous substances into the sac; but the results have proved far from being satisfactory, and many fatal cases have been reported. I recall a case some fifteen years ago, in which I made a diagnosis of extra-uterine fetation. I punctured the sac *per vaginam* with the smallest aspirator needle, in order to remove the liquor amnii, yet upon the withdrawal of this delicate instrument so much blood came from the puncture that I had to catch the bleeding-point with the forceps, and to wait some time before the hemorrhage was arrested. From this slight operation septicemia set in, and the woman died a few days after. So gynecologists have given up the use of abortive agents, excepting the knife and electricity. Of the two, I prefer the former, but there is good warrant for the abortive use of electricity.

In the case I had before you, the conception took place in the left tube, which probably burst into the corresponding broad ligament. There the fetus grew, until finally the sac formed out of the broad ligament also burst, and the buttocks of the child came in contact with the omentum and the intestines—at least, so I found them at the time of the operation. It is always best to remove, if possible, the whole sac; but in this case this procedure was unwarrantable, on account of the firm adhesions. Had the sac been whole I should have attached its mouth to the abdominal wound, and have put into it merely a drainage-tube. But as its upper portion had burst, and its cavity communicated with that of the abdomen. I stuffed it with a large piece of iodoform-gauze, which was gradually withdrawn from day to day.

As the child had been dead for six months, the placenta had become detached and shrivelled. Consequently it was easily removed, and without hazard. But when the child is living, or the placental circulation is still active, the detachment and removal of the after-birth is a most formidable undertaking, on account of

the fearful hemorrhage. This is due to the large size of the placenta, and to the absence of contractile tissue in its site. The sinuses are therefore more numerous than in the uterus, and, as contractility is absent, they bleed without stint. The serious question then in such cases is how to deal with the placenta. Its removal may give rise to fatal hemorrhage. Left *in situ* to come away piecemeal by decomposition, it invites blood-poisoning. The rule, therefore, is to remove, if possible, the whole sac, and with it, of course, the placenta. This can occasionally be done by slow and careful enucleation, and by the aid of many ligatures. Another method is not to remove the whole sac, but to cut off, by quilted and cobbler's sutures under it, the circulation of the placental site, and then to detach the placenta. But most commonly the placenta has to be left behind, to be thrown off by the natural process of decay. To avoid as much as possible the danger of septicemia, the mouth of the sac is stitched to the abdominal incision, and the most efficient drainage by iodoform-gauze established.

CLINICAL MEMORANDUM.

A CASE OF SUFFOCATIVE LARYNGO-TRACHEITIS, AND A METHOD OF IMMEDIATE RELIEF.

By EDWIN J. KUH, M.D.,
of Chicago, Illinois.

In illustration of an additional indication for the method described in my article, "A Topical Treatment of Bronchitis" (The Medical News, March 11, 1893, p. 267), I wish to describe the following case:

Mrs. L. L. attended a ball shortly after her return from a wedding trip to the South. The next day I found her suffering from what seemed to be an ordinary laryngo-tracheitis. On the succeeding morning I was again called, finding the conditions greatly changed. She had been awake all night suffering from an attack of "croup," but as this was to her a familiar reminiscence of childhood, she was more amused at the experience than alarmed at the distress.

I found her with accelerated and stridulous respiration and cyanotic face. There was a gurgling sound of advancing and receding mucus in the windpipe. Occasionally the mucus would become so lodged as to suppress respiration altogether; she would then struggle violently to regain her breath. The temperature was 101°. The pharynx was almost normal. The superior aperture of the larynx was swollen and congested, and the glottis was covered with a sticky yellow-greenish secretion. Upon inspiration the tracheal mucosa presented itself swollen and with engorged capillarles; thick bands of a very tenacious, green discharge stretched across the trachea, almost blocking it up.

During the previous night the patient had vomited several times. I again forced vomiting, and in various ways succeeded in giving transitory relief, but the secretions would again gather. During the forty minutes consumed in these observations the patient had several attacks of suffocation, each seeming more severe than that preceding.

In view of my experience in the rapid elimination of bronchial secretions (see the article quoted), I then decided to apply the deep spray. The success of its application was as rapid and striking as we see it in intubation on for laryngeal stenosis. Each inhalation of the spray was followed by the ejection of the tenacious, cohesive discharge, which was so adherent to the mucous membrane as to carry away small quantities of blood at each each expectoration.

The patient was then put back to bed, entirely relieved of dyspnea, and sank into a sleep of exhaustion. Recovery took place without further incident, except that the sputa remained bloody for a few days.

MEDICAL PROGRESS.

Congenital Ptosis with Synchronous Movements of the Affected Lid and the Lower Jaw.—Hubbell (*Archives of Ophthalmology*, xxii, 1, p. 65) has reported the case of a well-developed, healthy, and intelligent boy, seven years old, in which a short time after birth it was observed that the right eyelid failed to open in association with the left, but remained closed except when the mouth was opened. It was possible, however, to keep the right eye closed while the mouth was open. The two eyes were of the same size, the pupils were normal in size, and the irides of the same color and normal in appearance and reflexes. There was marked divergent strabismus, with some downward deviation. The right eye could not be turned upward beyond the median plane or inward but little beyond the vertical plane; downward and outward, however, its movements were of usual extent. On ophthalmoscopic examination both eyes were found to be emmetropic. The fundus was normal on both sides. Vision was normal on the left, but it was barely possible to count fingers at the distance of four feet with the right eye. In explanation of the anomaly it is suggested that the origin of the fibers supplying the levator palpebræ had been transferred from the nucleus of the third nerve to that part of the nucleus of the fifth that sends fibers to the anterior belly of the digastric muscle. The nucleus of the third nerve seems to have been undeveloped in that portion from which arise the fibers supplying the levator of the upper lid, the superior rectus, and the internal rectus muscles, while that part sending fibers to the inferior rectus (possibly the inferior oblique) and the iris was normally present.

Aural Vertigo in Children.—Lannois (*Le Mercredi Médical*, 1893, No. 11, p. 129) maintains that aural vertigo may appear in children either as a transitory epiphenomenon or as a manifestation of an acute lesion of the auditory apparatus; recurring, however, at intervals of varying duration, in association with chronic disease of the ear, it is much more rare in children than in adults. He reports four cases. One was in a child of seven that had measles and whooping-cough at two, followed by chronic otitis media. The second case was in a child that had, for eighteen months, suffered with vertigo and vomiting, and that presented cicatricial adhesion between the tympanic membrance and the handle of the malleus. The third case was in a child of seven that had scarlatina two years previously, and thereafter the symptoms of aural vertigo. The fourth case was in a

child of eight that suffered some impairment of hearing after a fall at the age of five, and that presented symptoms of aural vertigo for fifteen months following an attack of influenza. Attention is called to the possibility of mistaking the attacks for those of epilepsy, but the loss of consciousness in the one condition and the occurrence of vomiting in the other should be distinctive. Of sixty deaf-mutes, but six presented vertigo and nausea. Children who still heard a little seemed more liable than those that were entirely deaf.

Disinfection by High Temperature.—DR. ADOLF HEIDER (*Arch. f. Hygiene*, vol. xv, No. 4), of the Department of Hygiene at the University of Vienna, has published some observations on the increased efficiency of disinfecting agents at high temperature. He experimented with phenol, cresol, and their sulphonic acids, sodium and potassium hydroxids and carbonates and sulphuric acid. The bacillus anthracis and the micrococcus pyogenes aureus were employed as test microbes. Heider found, as might be expected, a decided increase in germicidal action at temperatures of 130° F. and 165° F., as compared with the effects of the same agents at ordinary temperatures. He points out the practicability and advantage of using solutions of these disinfecting agents in water, by which means microbes can be completely destroyed at temperatures much below the boiling-point of water and more quickly than with water alone.

Heider suggests that in cases of infectious diseases, a covered boiler, containing the disinfecting solution, should be placed in the sick-room, and bed-linen and similar articles placed in it as soon as they are put aside to be washed. When the boiler is filled it can be placed on the fire and heated for a brief period to boiling, and efficient disinfection will have been accomplished.

The Etiology of Measles, Smallpox, Scarlatina, and Syphilis.—DOEHLE (*Centralbl. f. Bakteriologie u. Parasitenk.*, xii, 25, p. 907) makes a preliminary illustrated report of the results of a biologic study of the etiology of measles, scarlatina, smallpox, and syphilis, in each of which he describes the presence of one or more protozoa to which he attributes specific etiologic properties.

THERAPEUTIC NOTES.

Tolypyrin, or paratolydimethylpyrazolon, $C_{12}H_{14}N_2O$, is a synthetic product, chemically allied to antipyrin, than which, however, it has by GUTTMANN (*Berliner klin. Wochenschr.*, xxx, 11, p. 249) been found to possess more active therapeutic properties. It forms colorless crystals, melting at 276.8° or 278.6°, having a bitter taste, being soluble in ten parts of water, readily taken up by alcohol, and almost insoluble in ether. It was found that 60 grains of tolypyrin, given in four equal parts at intervals of an hour, were capable of lowering febrile temperature at least 2.7°, and often more. The decline began, with sweating, within an hour of the first dose, and was progressive, reaching the maximum in the course of five or six hours. Then the temperature slowly again rose, however, without chill, the therapeutic effect remaining appreciable for from twelve to eighteen hours. In recent cases of acute articular rheumatism of mild type the administration of 60 grains of tolypyrin daily in doses of 15 grains every three hours, was attended with decided benefit, the action being entirely comparable with that of antipyrin and that of salicylic acid. The agent also proved useful in the relief of headache of neuralgic origin.

Tolysal, paratolydimethylpyrazolon salicylate, $C_{12}H_{14}N_2O.C_7H_6O_3$, is a new product of the laboratory, occurring in small, faintly-pink crystals, of bitter taste, melting at a temperature between 213.8° and 215.6°, and being slightly soluble in water, with difficulty soluble in ether, and readily soluble in alcohol and acetic ether. HENNIG (*Deutsche medicin. Wochenschr.*, xix, 8, p. 193) has made a clinical study of the therapeutic utility of tolysal, and finds that in doses of from 60 to 120 grains in divided doses, at intervals of from half an hour to an hour, in the course of the latter half of the day, it is extremely useful as an antipyretic, an antineuralgic, and an antirheumatic. The decline of temperature is associated with a lowering of the blood-pressure, but without any unpleasant complication.

The Treatment of Writer's Cramp.—BENEDICT has relieved a case of writer's cramp by injecting carbolic acid in the neighborhood of a sensitive point in the course of one of the flexor tendons of the related forearm. LANGES (*Münch. med. Wochenschr.*) has succeeded in overcoming writer's cramp by having the pen held between the second and third fingers in such a way that the holder rests upon the latter at an angle of from 110° to 135°, while it is supported below by the thumb, the index finger resting lightly above.—*Corr.-bl. f. Schw. Aerzte*, xxiii, 6, p. 256.

Camphoid, a Substitute for Collodion.—

℞.—Camphor, Alcohol . . . . . āā 20 parts.
Pyroxylin . . . . . 1 part.—M.

℞.—Camphor, Alcohol, absolute . . . āā 20 parts.
Pyroxylin . . . . . 1 part.
Iodoform . . . . . 4 parts.—M.

Pharmaceut. Ztg., 1892, No. 31.

For Singultus.—FESSLER (*Corr.-bl. f. Schw. Aerzte*, xxiii, 6, p. 225) recommends that the pharynx be irritated until vomiting is induced. It is not necessary that the stomach be emptied; it suffices if but a small quantity of mucus be injected; the muscles of the stomach and abdomen must have contracted. The explanation of the mechanism is that the reflex act of vomiting requires so intense an activity of the vagus that the less powerful reflex act of singultus is thereby interrupted.

For Chronic Bronchitis and Emphysema.—

℞.—Ammon. carbonat. . . . . gr. iv.
Tinct. scillæ . . . . . ♏xx.
Spt. ætheris . . . . .
Tinct. nucis vomicæ . . . ♏x.
Infus. serpentariæ . . . ad f℥j.—M.

S.—Two tablespoonfuls every six hours.

Practitioner, l, 3.

The Medical News.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

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SATURDAY, APRIL 15, 1893.

THE "SPITTING" HABIT.

IT is time that the common and disgusting practice of indiscriminate spitting in public places and conveyances should be checked, not only because it is uncleanly, but particularly on account of the dangers that lurk in this form of uncleanliness. The sputum of tuberculous persons, when in its dried state, is a common means of conveying the specific germs of tuberculosis. Under the prevailing practice, the dust-laden air of assembling-places and public conveyances contains particles of infectious matter which constitute a real danger, especially to those who have a predisposition to tuberculous disease.

It is futile to attempt to limit the contagiousness of tuberculosis if people will persist in the most open and reckless manner in setting at defiance the established and simple rules of prophylaxis. DR. PRUDDEN has very clearly stated the case when he says: "If the vile and increasing practice of well-nigh indiscriminate spitting goes on unchecked in nearly all assembling-places and public conveyances; if the misguided women who trail their skirts through the unspeakable and infectious filth of the street are to be admitted uncleansed into houses and churches and theaters; if theaters and court-rooms and school-houses and cars are to remain the filthy lurking-places of contagia which their ill ventilation and their mostly ignorant and careless so-called cleaning necessarily entail; if in sleeping-cars and hotel bedrooms the well are to follow consumptives in their occupancy, without warning, or even the poor show of official disinfection; if in ill-ventilated and ill-cared-for dwellings the well must breathe again and again the dust-borne seeds of tuberculosis; if no persistent warning is to be given to the ignorant of the dangers which lurk in uncleanliness —then our task will be complex as well as difficult in limiting the contagiousness of tuberculosis."

Everyone is intensely interested in this subject. Pulmonary tuberculosis is too prevalent and fatal a disease to allow well-known means of prevention to be ignored without earnest and emphatic protest. Self-interest and a proper regard for the welfare of others, when once aroused, should be equal to the task of sweeping this offensive and dangerous practice out of existence. Did the conscious victim of this disease reflect for a moment upon the untoward consequences of his pernicious habit, he would, from motives of humanity, avoid an act that tends to add to human suffering.

Ignorance of the ways in which preventable diseases are spread is a primary cause of neglect to use needful precautions. In educating the masses in the knowledge of the practice of preventive medicine, the medical profession has a responsible duty to perform. The fact that pulmonary tuberculosis is contagious must be impressed upon the public mind. The idea that the disease is hereditary and hopelessly beyond limitation has taken deep root, and consequently measures of prophylaxis are greatly neglected. Expectation of cholera causes a panic to spread from shore to shore, and the most extraordinary preparations are made to prevent it; but tuberculosis stalks through the land slaying its victims in numbers only faintly approached by the deaths resulting from the severest outbreak of cholera, without exciting popular comment or coöperation in efforts to limit the prevalence of the disease in any degree commensurate with the gravity of the subject.

Legislators ignore the plea for dairy-farm inspection intended to eradicate tuberculosis from among herds of milch-cows, and other attempts to lessen the ravages of the disease meet with like indifference. Ignorance and want of appreciation of the teaching of sanitary law are mainly responsible for this reckless indifference. "Persistent warning

must be given to those ignorant of the dangers that lurk in uncleanliness." Popular sentiment must be created to assist the efforts of the few zealous philanthropists who are laboring earnestly for the adoption of measures known to be effective in restricting preventable disease.

A distinguished English author once reproached Americans for tolerating the unseemly habit of indiscriminate spitting. It may be mortifying to our pride to have our peculiar weaknesses exposed, but there is a serious side to this subject, hitherto unnoticed, which cannot be too frequently exposed to view. "Unrefined and vulgar" is a mild criticism of an act which modern science teaches us may be the means of spreading broadcast the seeds of fatal disease.

THE DYSURIA OF SENILITY.

AMONG the disabilities that senility brings with it is an annoying frequency and difficulty of micturition, a subject that receives intelligent consideration in a recent article by ASSMUTH (*St. Petersburger medicinische Wochenschrift*, xviii, 9, p. 79). Most commonly the disturbance is ascribed to obstructive enlargement of the prostate gland—in many instances, however, without actual warrant. Increase in the size of the prostate gland is not a constant accompaniment of advanced life; as a matter of fact, atrophy may not uncommonly be detected. On the other hand, the prostate gland may be materially enlarged, with entire absence of derangement of micturition.

In some cases the prominent feature of the dysuria of the aged is an imperative desire to urinate at short intervals, the stream of urine retaining its force and velocity but for the moment, while its continuity is sometimes interrupted and a few drops usually flow after the act has apparently been completed. In other cases the frequency of micturition is even greater during the night than during the day; while in still other cases the conditions may be reversed. In all, however, the urine may be clear and otherwise normal. Though the frequency of micturition be increased, but a small amount of urine is, as a rule, evacuated at a time. When, however, the increased frequency has been maintained for a considerable time there is sometimes actual polyuria.

In a case presenting the symptoms detailed, the question will at once arise as to whether or not the bladder is completely emptied at each micturition. The answer will be gotten by practising catheterization on several occasions immediately after the bladder has been *spontaneously* evacuated. If the presence of residual urine or of a foreign body can be excluded, a diagnosis of the dysuria of senility may be safely ventured.

One cannot rely upon digital examination *per rectum* to determine whether or not the prostate gland offers any obstruction to the outflow of urine. For this purpose it is necessary to make an examination of the urethra by means of the sound. As already indicated, increased size of the prostate is not a necessary accompaniment of the dysuria of old persons, and retention of urine may or may not be present.

Under normal conditions, when the intra-vesical pressure has reached a certain degree, reflex contractions of the muscular coat of the bladder take place in an effort to expel the contents of the organ; the internal sphincter is relaxed, and a few drops of urine escape into the prostatic urethra. As the pressure increases, the external sphincter is irritated, voluntary relaxation is permitted, and the urine escapes.

Now, it has been found that in old persons, in consequence of disease of the vessels, the muscular structure of the bladder sometimes undergoes fibroid degeneration. The resistance of the internal sphincter is diminished and the desire to empty the bladder is induced before the intra-vesical pressure has reached at all a considerable degree; while the repetition of the process is followed by a diminution in the retentive capacity of the bladder. A deficiency of propulsive power, from weakness of the muscular coat, is responsible for the slowing and interruption of the stream. Of course, if hyperplasia of the prostate coexist, the difficulty is aggravated: a portion of urine is likely to be always retained, with a tendency to undergo decomposition. In cases of this kind the recumbent posture, by inducing venous hyperemia in the enlarged gland, will cause increased frequency of micturition, in contrast with cases of cystitis and of calculus, in which recumbency brings relief. In other cases the frequency of micturition is the greater by day.

In the way of treatment, not much is to be accomplished. The indications are to render the urine bland, to keep the rectum empty, to sustain the general condition; if there be retention of urine, the catheter will be required; if decomposition

occur, irrigation will become necessary; if the prostate cause obstruction, dilatation should be cautiously practised.

EDITORIAL COMMENTS.

The Lancet's Investigation of the Sanitary Condition of Chicago, as cabled to American newspapers, is in essential agreement with the report in The News of last week. The lake water, as delivered from the four-mile tunnel, is found to be good, "comparing very favorably" with that supplied to London. But the actual drinking-water is often bad owing to impure ice. With the necessary boiling and filtering, and scrupulous care as to contamination by ice, little danger is to be feared from the water. The condition of the Chicago River is pronounced as bad as bad can be, but it might have been added that it is no worse than that of the Thames at and below London. But, of course, London does not drink the Thames water, whilst Chicago is at least in danger of drinking the Chicago River water—much diluted. The remarkably low death-rate of Chicago, pointed out by The News, is proof that the danger is not extreme, and that so far the pollution does not reach the four-mile intake. It is a pity that the reversal of the river current could not have been made permanent and complete before the Fair. The authorities must use every possible exertion to lessen the danger of sewage-contamination, and to keep the sewer and river outflow from the lake.

Questions arise as to whether the ice used in Chicago is exceptionally impure, as compared with that of other cities, or whether the local supply is partly good and partly bad; careful attention should be given these points. People will demand water cooled by ice, and the devices for effecting this without placing the ice in the water are to be advised.

The Conference of State Boards of Health, held in New York last week, grappled with the sanitary problems presented by the United States, especially in view of the possible coming epidemic of cholera. The spirit of the meeting showed a general belief that we shall have the disease among us, and that all arrangements must be made to prevent or overcome it. Surgeon-General Wyman reported the quarantine service along the Gulf and Atlantic coasts to be uniformly good. After much discussion the proposition to place a portion of the inspection service between State lines under the United States Marine-Hospital Service failed of adoption, though there was division of opinion among the members upon this point. In case the epidemic appears it was recommended that the railroads should furnish separate cars for the use of the sick or "suspects," and suitable accommodations for them at places *en route* designated by the State Board of Health. The details of the medical inspection of trains, the disinfection of baggage, etc., were also considered. Delegates were, perhaps, too prone to be over-confident as to the sanitary conditions and the mechanisms of prophylaxis and care, as regards their own States or cities, but they probably believed that too great fear in such matters is quite as bad as too great confidence.

Trained Attendants.—The trained nurse is to be supplemented by the trained attendant. The Massachusetts Emergency and Hygienic Association has just prepared a class of young women for a new occupation, that of trained attendants for convalescents, chronic invalids, elderly persons, and little children. The trained nurse is often too expensive a luxury to be kept long. The trained attendant, who has been instructed by competent trained nurses, is prepared to take the place of the nurse. She has been taught how to ventilate the rooms, make beds, bathe the patient, serve and prepare attractive food, etc. The young women admitted to the Boston classes must be at least twenty years of age, and be possessed of good antecedents. The course of thirty lessons, for which three dollars is paid, is followed by an examination which, if creditably passed, entitles the pupil to a diploma.

An Appeal to the Pity of Abstractors.—For the out-and-out thief we have no word of reproof—at least none that will reach his conscience or his custom. Every week we are amused and provoked to see abstracts, epitomizations, and lengthy extracts of articles printed in The News appearing without a hint of credit in the journals of "our esteemed contemporaries." This is quite bad enough, but when every other week the stolen goods are returned to the man who never owned them it is just a bit too much! When abstractor No. II quotes abstractor No. I why should No. II leave the original journal entirely out of the count, and give all the credit to abstractor No. I? We think the little boy who climbed the tree and got the apple should at least have the core. But we suppose that, as usual, the big boy will successfully prove that "there hain't agoin' to be no core."

History of Medical Education of Women.—In the *Fortnightly Review*, March, 1893, Mrs. E. Garrett Anderson gives a brief history of the movement for the admission of women to the medical profession. It appears to be written without a particle of open or concealed grudge against the profession which so long and unjustly opposed the movement, and this is all the more commendable, since Mrs. Anderson could say, *magna pars fui*. It is very gratifying to notice that to our own country is given the honor of inaugurating the movement and of pushing the reform to fruition. Miss Elizabeth Blackwell, in the face of many difficulties, succeeded in obtaining the degree of M.D. in 1849, from the University of Geneva, U. S. A. She then went to London, and there also led the way in opening to women the medical profession.

"Unconscious Memory?"—In the *North American Practitioner* for January, 1893, Dr. W. H. Smith, of Shell Rock, Iowa, has an article of which a page is taken (without quotation marks or hint of credit) from an editorial in The Medical News of November 26, 1892, on Journalopathy. We had become so habituated to this sort of thing that we "smiled and excused." But now comes Dr. J. Lucius Gray, of La Porte, Ind., and in the March number of the *Practitioner*, shows that Dr. Smith "unconsciously quoted" almost all of the balance of his article from a previous essay of Dr. Gray. The "deadly parallel column" evidently had no terrors for

Dr. Smith—who, alas! signs himself a "Fellow of the American Academy of Medicine," etc.

The Recent Outbreak of Smallpox at Leicester, England, has supplied some facts which the anti-vaccinationists will find it difficult to explain away. Ten children who died had not been vaccinated, while among the vaccinated children there were no deaths. The report of the medical officer of the town is even more significant than the deaths of the ten unvaccinated children and the immunity of all who were effectively protected. The staff of the Fever Hospital was made up of twenty-eight persons. "Of these twenty-eight, twenty-two were protected," Dr. Priestley says in his report, "including eight whom I re-vaccinated, while the remaining six had only been vaccinated in childhood, and so were not 'efficiently' protected. Of these six 'inefficiently' protected officials—all of whom refused re-vaccination, which I offered them—four have since contracted smallpox and one has died; so that two only of the staff now remain 'inefficiently' protected, and it will be interesting to note their future histories."

The Time Allowed Speakers and Essayists before the meetings of the American Medical Association, according to the proposal of the Committee on Constitution, etc., is, for the reading of papers, twenty minutes. In the discussion no speaker shall occupy more than fifteen minutes without unanimous consent. The absolute forbidding readers a longer time than twenty minutes is an excellent rule, but we think the time-limit in discussion should have been made ten minutes, and no vote, however "unanimous," should give a longer time. No one will be guilty of the seeming discourtesy of a negative vote on a question of allowing more time, and if it be given one, others will ask or get it, and thus, as a result, waste of time, long sessions, and unlimited boredom are permitted.

"Original Communications" in the Canadian Practitioner.—We would suggest to "our esteemed contemporary," that there is a limit to human endurance and patience. In the March number of the *Practitioner* there are six articles indexed and classified as "Original Communications," but every one is taken bodily from other journals. Two of them are credited to the journals from which they are taken; of the four not credited, three are from THE NEWS, viz.: the article by Dr. Abbott (Sept. 10, 1892), that by Dr. Hartshorne (same issue), and that by Dr. Bartholow (Feb. 4, 1893). Two plain Anglo-Saxon monosyllables are the only true (but we suppose improper) means of designating such editorial doings.

An Echo from the Past.—From Tennessee there comes a sad story, the confession of a crime committed twenty-eight years ago by a physician who, in his over-scientific zeal, sought to remove the body of a dead patient from the grave in order to make a post-mortem examination. The husband of the dead lady came upon the doctor at his work, struck him, but was himself finally accidentally or in self-defence killed. The grave was then made to hold the husband's body, and at the doctor's death, twenty-eight years after, the confession is now made public. The physician adopted and raised his victim's children.

Decrease of Crime in England.—There is taking place in England a steady, continuous decrease in prison population and crime that is most gratifying. In 1876–77 the average number in local prisons was 20,361, while in 1891–92 the number was 12,663. In 1869 there were 2006 sentences of penal servitude; in 1891, but 751. The number of persons known to the police as belonging to the criminal classes in 1867–68 was 87,668; in 1891 the number was 51,095. Felonies in London, in 1890, were 2053 fewer than in 1889. Similar results are reported in Liverpool.

"Gold Cures" in Colorado.—Two bills are now on the legislative calendar of Colorado for establishing, at the expense of the State, "gold-cure" institutions for drunkenness. One, of course, advocates the Keeley method, and the other an imitation. Each is trying to convince the astute legislators that it is the better; the judgment of the legislators is concerned only with this question, and not at all with any doubt as to the excellence of any such method. It is thought the Governor's veto is all that will stand in the way of the State's disgrace.

The Hotel Physicians Again.—The *Cincinnati Lancet-Clinic* says that a New York hotel physician charged a Cincinnati traveller twenty-five dollars a visit for medical services. This is quite an advance in price from the seven-dollar fee confessed to by the *Medical Record*. Would it not be economy for travellers hereafter visiting the metropolis to take with them the family physician?

Statistics of English Medical Profession.—There are in England, Scotland, and Ireland 30,590 practitioners, 1513 having registered in 1892, the largest number entering in any one year since statistics have been available. The total number of medical students registering in 1892 was 1671—a smaller number than that of previous years.

A Dispensary Conducted by Women has been in operation for the past year in Baltimore and has proved successful in many ways. Much of the success has doubtless been due to the praiseworthy feature of evening service. The dispensary is open three evenings and two afternoons of the week.

Suppression of Prostitution by law is to be attempted in Arkansas, a bill providing heavy penalties for the inmates of houses and for negligent police-officers having been passed by the Senate. Experience has shown that such attempts are worse than useless.

Winter Cholera in Russia.—Our consul at St. Petersburg reports to this Government the statistics of the cases and deaths in Russia during the winter. It appears that cholera has been general throughout the coldest weather, and has shown a very high rate of mortality.

An Object-lesson.—It is related that a member of the British Parliament who was opposed to vaccination succumbed to an attack of smallpox.

"Dr. Booth," the New York bogus-diploma merchant, has been sentenced to six months in the penitentiary.

REVIEWS.

A Treatise on Nervous and Mental Diseases, for Students and Practitioners of Medicine. By Landon Carter Gray, M.D., Professor of Nervous and Mental Diseases in the New York Polyclinic, etc. With 168 illustrations. Philadelphia: Lea Brothers & Co., 1893.

We have fallen upon an area of unusual activity in the production of neurologic treatises, several of which by American authors have appeared during the last year or two, and among these is the present excellent work by the distinguished New York neurologist, Dr. L. C. Gray, a highly successful effort to condense into a volume of reasonable size a practical knowledge of nervous and mental diseases. It is a book which the neurologist can consult with interest and advantage, but one which will be found to be particularly useful to the student and general practitioner. Full but choice use has been made of the neurologic material which has been scattered broadcast in journals, monographs, and transactions in the chief modern languages, during the last two decades; and to most of the chapters bibliographic lists have been added, which will be found of value to readers who may desire to go to the original sources of information, and which also prove the industry and wide reading of the author. A necessary anatomic introduction is condensed into one chapter of nearly seventy pages; then follows a chapter of about twenty pages in which facts necessary to be known by the practitioner about electricity are well presented; after which the book is divided into two parts, one, of about 450 pages, devoted to nervous diseases, and another, of 94 pages, to mental diseases. Under the head of Nervous Diseases little that is necessary to be known has been omitted; under Mental Diseases the most important forms of insanity are briefly treated, and chapters on the Pathology of Insanity and on Idiocy are given. No classification of insanity is used, the author believing, with other good authorities, that neither a classification nor a general definition of insanity are necessary to a working-knowledge of the subject.

The Anatomical Introduction is particularly good, both in its illustrations and in the clearness of the descriptive text. Dr. Gray has the high art of presenting elementary facts, and matter, old or new, in a lucid and attractive, even if sometimes in a dogmatic way. Many of the illustrations in this and other portions of the book are original, and those which are not, have been taken from the best sources—as from Sachs, of Breslau; Stilling, Edinger, Dalton, Fleichsig, Gowers, Duret, and Hermann. Some excellent photographs of diseases and conditions, which lend themselves to this method of representation, are scattered throughout the book, as of poliomyelitis, progressive muscular atrophy, pseudo-hypertrophic paralysis, the cerebral palsies of childhood, Huntington's chorea, athetosis, lead-paralysis, spasm of the trapezius, akromegalia, and types of insanity such as melancholia, paretic dementia, and terminal dementia. The large space which throughout the work has been given to the discussion of symptomatology and treatment will serve to make it popular, especially with busy workers.

The chapter on Neurasthenia is one of the best in the book and in the language, a fact which will commend it to many practitioners. Under the head of Nervous Diseases of Probably Microbic Origin, the author considers tetanus, tetany, hydrophobia, and diphtheric paralysis, while chorea is still classed under the neuroses. The chapter on Certain Nervous Symptoms Common to Different Diseases will be appreciated by those who, from time to time, wish enlightenment on some cases of vertigo, headache, insomnia, or coma, of whose pathology they have no clear trace. The more recently described diseases or symptom-complexes, such as paramyoclonus, astasia-abasia, myxedema, and akromegalia, receive attention.

Syringomyelia is well discussed in a chapter which carefully considers its pathology and diagnosis, but contains the statement that in not a single instance has the author been able to find that the diagnosis has been made before death. We have certainly seen it made before death, and verified by autopsies in several cases, and the symptom-picture of the common form of this affection, although somewhat irregular, is so definite that it can be almost as readily recognized as most of the well-known forms of sclerosis. A chapter is given on Railway Injuries and Other Traumatic Diseases of Medico-legal Interest; and under different mental diseases, and not a few of the nervous affections, the medico-legal bearings of the subjects are discussed, Dr. Gray's experience in medical jurisprudence thoroughly qualifying him for this part of his work.

Under Mental Diseases, some of the best articles are those on Morbid Fears and Impulses, Melancholia, and Paranoia. The last is especially good, and shows a thorough acquaintance with the history and literature of the affection, and also a knowledge of the subject from large experience. The chapter on Paretic Dementia is sufficient, although short as compared with the space devoted to this important affection in some works devoted to insanity. The style in which the book is written is worthy of passing notice. It has, to a certain extent, a personal flavor, which, while it may sometimes expose the author to criticism, will on the whole commend the book to many readers. He does not hesitate in the first person to commend or condemn, to accept or reject, or to make energetic comments.

The book is produced in the best form of publishers who stand first for the excellence of their work; print and paper are both of the best.

Dr. Gray's book will long hold its place as a standard treatise on nervous and mental diseases.

The Anatomy and Surgical Treatment of Hernia. By Henry O. Marcy, A.M., M.D., LL.D., etc. With sixty-six full-page heliotype and lithographic plates, including eight colored plates from Bourgery, and thirty-seven illustrations in the text. 4to, pp. 421. New York: D. Appleton & Co.

This is a very large and handsome book. A great part of it is beyond the province of the reviewer, being made up of quotations, mainly from authors who have long since gone over to the majority, and whose writings have become classic. It is probable that to most of the present generation of readers they are scarcely

known even by name; and it is, therefore, well that they should thus be reintroduced, in something of their ancient stately dignity, among the handbooks and compends which form so large a proportion of the medical literature of our day. For not only have we here copious extracts from the text of these departed worthies, but reproductions, somewhat reduced, indeed, of their splendid illustrations; and these will be a revelation to eyes familiar with nothing but modern text-books and treatises. Yet, looking at the folios of Cooper and Scarpa, now before us, we cannot but regret that in the process-copy so much of the fine quality of the work of Heath and Adam—two of the best exponents of the now lost art of steel-engraving—is necessarily wanting. Six of the plates given by Dr. Marcy are very successful reproductions of colored lithographic prints from Bourgery. Three plain lithographs, from those drawn by Bagg in Gay's work, are fairly good; one, from Cruveilhier, has suffered much in the copying. All the original illustrations, three lithographic plates, and a number of woodcuts, are very inferior.

We are unable to discover that Dr. Marcy has given anything new in regard to the anatomy of hernia or improved upon previously existing descriptions. Of the properitoneal form, which within a few years past has been the subject of able discussion both in this country and abroad, he makes no mention. This is the more to be regretted, because there is reason to think that such cases may sometimes occur without being recognized, to the disaster of the patient and the discredit of the surgeon. The omission is the more surprising as a whole chapter is devoted to the far simpler and less important variety in which the ovary is the extruded viscus.

In the chapter on diaphragmatic hernia nothing is said of Postempski's brilliant and successful operation for its relief, access being had from above through an opening into the pleural cavity. At the end of this chapter there is the rather odd interpolation of a paragraph on internal intestinal obstruction, and then the following oracular opinion:

"There is but one rule. When the obstruction to the intestine endangers life an exploratory operation must be undertaken in order to determine the conditions accurately, and, if possible, restore the parts to their normal state and function."

Exactly; but in practice the difficulty lies in deciding whether the patient's life is in danger and this cannot be averted except by an operation. It is just this question that perplexes the young practitioner, and often, very often, his older brethren.

The gist of the material contributed by Dr. Marcy seems to be a repetition of his arguments for the use of the buried tendon-suture, which he has for twenty years past advocated in articles published in various medical journals.

The needle figured by him, and spoken of as a modification of Hagedorn's, is merely that known as Baker Brown's, but with a more abrupt curve toward the end; it has nothing in common with Hagedorn's, which is flat, and its essential feature is the straight cutting-edge, like that of a gorget, at its point.

Dr. Marcy reviews somewhat hastily the various methods employed from the earliest times for the radical cure of hernia. He makes no mention of Kocher's, which is certainly a very brilliant one as we have seen it performed, and which seems to promise great efficiency when it is practicable. For, like many of the other procedures recently brought forward, it requires that the sac should be completely isolable; the difficulty of doing this, although very little dwelt upon by authors, has in our own experience been a not infrequent cause of embarrassment. As to Dr. Marcy's own operation, we are not sure that we rightly understand his description; but it seems to be a very complicated way of effecting the object aimed at. This object he states to be the reconstruction and narrowing of the canal, and the restoration of its obliquity (p. 391). And after describing the procedure, he says: "The spermatic cord is now enclosed within a canal restored to its normal size, length, and obliquity." Our own idea, from some little practical experience, is that the prime object should be the obliteration of the hernial sac, and of the pouch of peritoneum which represents its initial stage. The cord in many cases need not be considered at all, except by way of avoidance.

Dr. Marcy's use of English is very peculiar. "Factorage" and "interfolding" are favorite words with him. In the explanation of Plate XI, on page 36, we note "the coxal bone" and "birth of the descending branch of the pubis." "Pubian" and "infra-pubian" are not legitimate. We are told that the staphylococcus pyogenes albus is "so universal a habitat of the skin," etc. (p. 112); and that certain precautions are "generally accepted as advisory."

With proper names he deals very unkindly. "Hagedorn" is throughout spelled "Hagerdorn." We read of "Paulus Aeginatus," "Dessault," "Ammusal," "Pomcet," and "Golobin." Mr. A. W. M. Robson becomes Dr. A. W. Robson; and in a foot-note we find the learned author of the Icones Herniarum referred to as "Camper Peter," his editor as "Sommerung," and the citation "Plate Sexta." On page 160, in a foot-note, we find a reference to "Med. Cor. Bl. d. Würtlembärtzl. Ver. Stuttgart, 1862."

Such errors ought not to occur in a small and cheaply gotten-up book; in a large and pretentious volume like the one now under consideration, they become serious blemishes.

Commercially speaking, we may highly commend this book; but we cannot regard its title-page as an accurate description of its contents. There is an ancient adage: "Who drives fat cattle should himself be fat."

Human Anatomy: A Complete and Systematic Treatise by Various Authors, including a Special Section on Surgical and Topographical Anatomy. Edited by Henry Morris, M.A. and M.B. Lond., etc. Illustrated by 791 woodcuts, 214 of which are printed in colors from drawings made expressly for this work by special artists. Pp. 1286. Philadelphia: P. Blakiston, Son and Co., 1893.

In the preface to this work, the editor states that it "is designed for the use of students, and aims at being a complete and systematic description of every part and organ of the body, so far as it is studied in the dissecting-room."

In its preparation, the various portions of the subject have been dealt with by authors known to have devoted special attention to them. Such collaboration has been found very successful in works in other departments of medical science; but we are aware of only two previous instances of its employment in treatises on anatomy. One of these, Todd's *Cyclopedia of Anatomy and Physiology*, is familiar to all the English-speaking profession; the other, originally published in Germany under the editorship of Bischoff, is best known through the French translation by A. J. L. Jourdan as the *Encyclopèdie Anatomique*. The result in the present case is eminently satisfactory.

The section on Osteology, by Mr. J. Bland Sutton, is of great interest, as might be expected by anyone acquainted with his published papers. This interest depends not merely upon a clear description of each bone, but upon the account given of its development, and of its condition at different periods of life. We note here, as elsewhere throughout the book, the impress of that modern thought which has made anatomy a science in the true and modern sense of the word.

The editor himself furnishes an admirable section on the Articulations. The Muscular System is described by Mr. Davies-Colley; the arrangement of the subject is very good, but the author seems to have a curious fancy for calling the muscles "sheets"—a term which we think hardly applicable, for instance, to the gluteus maximus, or to the different portions of the quadriceps femoris. Appended to this section is an alphabetical list, by Mr. Sutton, of abnormal muscles.

Mr. W. J. Walsham gives a very full account of the Arteries, Veins, and Lymphatics. The heart is elsewhere described, along with the other thoracic viscera.

The section on the Nervous System, by Dr. H. St. John Brooks, strikes us as especially good. The anatomy of the brain is a subject very difficult for the teacher to set forth, and exceedingly difficult for the student either to understand or to remember. To the beginner, all seems to be chaos, and there are no clues to the relevancy of the names of the parts. Dr. Brooks has certainly placed the matter in as clear a light as words can do it, greatly aided by excellent illustrations.

Of the organs of special sense, the eye has been assigned to Mr. R. Marcus Gunn; while the ear, tongue, and nose have been described by Mr. Arthur Hensman, who has written also on the thorax, including the organs of voice, respiration, and circulation, as well as the digestive organs above the diaphragm.

The article on the Abdominal Viscera, although in the table of contents the whole section including it is credited to Mr. Hensman, is in its heading stated to be by Mr. Treves. It is, of course, excellent, the portion relating to the arrangement of the peritoneum especially.

The Urinary and Reproductive Organs, and the Mammæ, form the subject of a very practical section by Mr. William Anderson.

The final contribution, by Mr. Jacobson, on Surgical and Topographical Anatomy, seems to us the least satisfactory portion of the volume. It is a terse enumeration of isolated facts, somewhat vaguely stated, and with scarcely any distinct reference to their bearing on surgical procedures. An experienced dissector and operator might find them useful for refreshing his memory, but as guides to the student they have but little value.

A book on Descriptive Anatomy deals with the most unchanging of all the facts of medical science. It is probable that, if the structure of the prehistoric man could be investigated, it would be found to be as accurately set forth in the volume before us as is that of his nineteenth-century descendant. Hence, in a work of this kind we are to look, not for novelty in actual facts, but for clearness and precision of statement, for abundance and variety of illustration, and for adaptation to the needs of the modern physician and surgeon. These qualities, we think, can be justly claimed for the book of which we have now given a notice rendered all too brief by the limited space available. As a whole, it is very highly to be commended. The typography is clear and remarkably free from errors. The illustrations are abundant and, in general, extremely good. A copious index adds very much to the comfort and convenience of those who would consult it.

A Treatise on Diseases of the Rectum, Anus, and Sigmoid Flexure. By Joseph M. Mathews, M.D., Professor of Principles and Practice of Surgery, and Clinical Lecturer on Diseases of the Rectum, Kentucky School of Medicine, etc. With six chromolithographs and numerous illustrations. New York: D. Appleton & Co., 1892.

The author states in the preface that this work records his individual experience of fifteen years as a rectal specialist, and is written in answer to the demands of his students and friends.

The volume contains about 550 pages and numerous illustrations. It is divided into twenty-four chapters. Several chapters, new to books on this special subject, have been introduced. Among these may be mentioned: Diseases in the Sigmoid Flexure; the Hysterical or Nervous Rectum; Anatomy of the Rectum in Relation to the Reflexes; Antiseptics in Rectal Surgery; etc.

The term "Sigmoid Flexure" has been placed in the title of the book, because the author is convinced of its great importance as a seat of disease, and for the reason that he is aware that the subject has not received the attention at the hands of the profession which it deserves.

Chapter I presents the rules to be observed in examination, diagnosis of rectal diseases, etc., and contains a strong array of reasons for making rectal examinations of applicants for life-insurance. In this chapter the use of the rectal bougie for the purpose of aiding in diagnosis is mentioned only for the purpose of condemning its employment.

The same reasons advanced to condemn the use of the bougie for diagnostic purposes, we should think, would apply to the method of examining the lower bowel by the introduction of the entire hand. Yet Dr. Mathews condemns the former, and under certain circumstances advocates the latter.

In Chapter III the author dwells at length upon the subject of constipation, and naturally so, for this trouble is associated with numerous diseases of the rectum. Herein is mentioned the case of a woman who averaged four months' time beween the actions of her bowels. No

wonder that Dr. Wm. Goodell defines woman as "a constipated biped."

On page 72, of the chapter under consideration, the types make the author state: "Each application requires about three drams (forty-five grains) of boric acid." No doubt the word *grams* was intended.

Chapters V, VI, and VII deal with the subject of hemorrhoids. The author's favorite method for the operative cure of internal hemorrhoids is by the use of the ligature. There are many surgeons to dispute the points made by Dr. Mathews in this statement (page 158): "I do not think it can be gainsaid but that the ligature is the easiest of execution, safest in its results, accompanied with less pain, and the convalescence quicker than by any other method of treating internal hemorrhoids."

In Chapters VIII and IX fistula-in-ano is considered. Therein is detailed the author's method of treating this lesion by means of an instrument which he names a "fistulatome." It is described in the following words: "Taking the ordinary exploring probe, it is inserted into the external orifice of the fistula to determine, if possible, that only one sinus exists. Being satisfied of this fact, a long, slender laminaria tent is taken, and pushed gently into the fistulous sinus to the fullest extent it will go. This is allowed to remain for several hours, keeping the patient under observation during the interim, at the end of which time it is withdrawn. This procedure causes but little if any pain. The laminaria tent is preferable to a sponge, for the reason that it is easier of introduction and furnishes its own moisture, which assists in its withdrawal; after this dilatation a small urethrotome is taken, having a very small point; closing the instrument tightly, it is pushed gently into the sinus as far as it will go, and then by the aid of the screw-attachment the sinus is dilated. When this is done, the turning of the screw at the side of the instrument will cause the concealed knife to protrude at the distal end according to the measurement desired," etc.

Want of space prevents further mention in detail of this valuable book of Dr. Mathews. The work is extremely practical; the treatments outlined are sound and are based upon ample experience, which testifies to their efficacy; and the subject-matter, in the main, is presented in a clear, concise and original manner. We can safely commend the treatise to our readers.

DIE MICROÖRGANISMEN DER MUND-HÖHLE. Von W. D. MILLER, Doc. Med. et Phil., Prof. am Zahnärztlichen Institut der Universität Berlin. Mit 134 Abbildungen im Texte und 18 Photogrammen. Zweite umgearbeitete und stark erweiterte Auflage. 8vo, pp. 448. Leipzig: Georg Thieme, 1892.

MILLER'S book, "The Microörganisms of the Mouth-cavity, and the Local and General Diseases that are Caused by Them," appeared in its first edition in 1889. The second edition, now before us, is an improvement upon the first in several respects, the most important of these being the chapter of 64 pages upon the aseptic and antiseptic methods of dentistry, including prophylaxis against caries of the teeth; treatment of caries of the teeth by means of germicides; use of antiseptics in the treatment of carious cavities; the disinfection of dental instruments; the methods of sterilization of instruments and other articles used in dentistry; the antiseptic action of materials used in filling teeth; with a list of the different disinfectants and antiseptics employed in this work as determined experimentally.

The fermentations that go on in the mouth-cavity as a result of bacterial growth are treated at some length, and are of special value in explaining the causes that underlie the destruction of the solid portions of the teeth.

Another portion of the book is devoted to the methods of examining the mouth-cavity bacteriologically.

There is also a very good description not only of the morphology of those organisms present in the mouth that cannot be cultivated by the ordinary means, but likewise of those that have been obtained in pure culture. The book is well illustrated, the illustrations being from sections of normal and diseased teeth. It can be recommended to all those who are interested in the surgery of the oral cavity.

FERMENTATION, INFECTION, AND IMMUNITY. A New Theory of these Processes which Unifies their Primary Causation and Places the Explanation of their Phenomena in Chemistry, Biology, and the Dynamics of Molecular Physics. By J. W. MCLAUGHLIN, M.D. 8vo, pp. 240. Austin, Texas: Eugene Von Boeckmann, 1892.

ANYONE who opens this book prepared to be amused by the crude speculations of an uninformed vagarist, will quickly abandon his pre-judgment and recognize that he has to seriously consider the theorems of a clear-headed and instructed thinker. Nevertheless, the author not only makes inaccurate statements, such as the definition of "force" as a "mode of motion," but he has also committed the grave error that too often retards progress—he allows speculation to outrun observation, and advances propositions that in the present state of knowledge can neither be accepted nor denied. Such speculations are legitimate when they lead to experiment that verifies or disproves; they are legitimate when they serve to unify into coherent doctrine what has hitherto been a mass of detached fragmentary notes of facts; but in the book before us neither of these ends has been achieved. We are inclined to assent to the more than plausibility—to the probability of much that the author asserts, but facts will not justify more than an inclination. Much more observation will have to be accumulated before any satisfactory theory of the subject treated can be even tentatively advanced. With all this, the book is worth reading for its lucidity, its thoughtfulness, its suggestiveness. We would all be better physicians if we reasoned as broadly as does the author.

GONORRHEA AND URETHRITIS. By G. FRANK LYDSTON, M.D. (Physicians' Leisure Library.) Detroit, Mich.: George S. Davis, 1892.

THIS little book is one which is intended to be practical. The first impressions which are formed upon reading the portion of it in which the writer sets forth his views on the evolution of gonorrhea are that this intention is not likely to be fulfilled. It would perhaps be a difficult task to reconcile these ideas with the present teachings of bacte-

riology; but as the author, in his preface, refers to the exposition of them as an "indulgence in more or less speculative theorizing," the reader who may not happen to agree with him should not, on that account, form a prejudice against the book as a whole. Evidence of the practical trend of the work is gained as one's acquaintance with it grows. The clinical picture of the disease is good, and the accuracy with which its phenomena, and those of its complications, are described, shows the touch of one whose experience has been wide and whose observation of detail is careful.

The chapter on the treatment of acute urethritis is fairly up to the times, and contains some very good advice. In dealing with the treatment of the chronic form, proper emphasis is given to the necessity of ascertaining the exact locality and extent of the persistent inflammatory condition, but we do not think that amongst advanced authorities full support will be found for the statement that "for ordinary purposes the bulbous, flexible French bougies will be found to be all that is necessary for this purpose." To be sure, the endoscope is mentioned, and a cut of Leiter's urethroscope is given, but it does not seem that sufficient stress is laid upon the importance of employing them. Of course, men's experience will vary, and means that may prove successful in the hands of one, will, for reasons not always easy to ascertain, fail utterly in those of another, and for this we must always make due allowance.

CORRESPONDENCE.

THE SANITARY CONDITION OF BALTIMORE.

To the Editor of The Medical News,

Sir: Baltimore is reasonably well protected against invasion by cholera. In the first place, the sanitary outposts of the Marine-Hospital Service at the points of debarkation of possibly infected immigrants will doubtless very greatly reduce the danger of invasion. However, should cholera break out on a vessel during its passage across the ocean, the disease would receive its first check at the National quarantine station to be established in Chesapeake Bay. In the event of the disease escaping detection at that point, the city possesses another line of defence at the municipal quarantine station at the mouth of the Patapsco River, nine miles below the city. This station is being equipped with a steam disinfecting plant at a cost of $8000, and will doubtless prove a valuable auxiliary to the National quarantine station before mentioned. At the local quarantine station is a hospital with a capacity of seventy-five beds, with sufficient land to permit the erection of barracks and tents to any required extent. I may add that the quarantine physician has held his present office for twelve years, and is thoroughly qualified for the duties of his office.

But how is Baltimore prepared to cope with cholera should it be introduced? Here, in the first place, we must examine our sources of water-supply, and consider the chances of contamination. The supply of the city is derived from two sources, known as the old, or Jones Falls, and the new, or Gunpowder River supplies. The total daily consumption of the city is 45,000,000 gallons, and the total available supply 300,000,000 gallons.

The Jones Falls supply comes from a thickly populated region and is in grave danger of pollution, which is, however, minimized by a system of inspection almost certain to detect gross violations of sanitary laws. This danger is present to a less degree along the course of the Gunpowder River supply. There is a very rigid State law against the pollution of streams, but its enforcement has not been very active, perhaps because there were few flagrant violations of the law. In the majority of cases, offences against the Rivers Pollution Act are committed through ignorance or carelessness, and a request from State or local sanitary authorities for an abatement of the nuisance has been promptly complied with. In other cases the powers of the law have been invoked with good effect. Measures are contemplated to guard the water-supply still more efficiently than at present.

The health authorities seem fully awake to the importance of being prepared. A house-to-house inspection has been made, and nuisances are being abated. The streets are, however, in a very dirty condition. This is partly owing to the fact that many streets have been torn up to lay tracks for cable and trolley lines of railway, and partly to the prolonged frost and heavy snows of the winter. There is no doubt, however, that the system of street-cleaning is a vicious one, being under the dominion of local politicians. A change in the methods of the street-cleaning and City Commissioners' departments having charge of street-cleaning and paving is demanded by professional and public opinion, but the patronage in both departments seems to be too large for the politicians to yield without a struggle.

The Health department has asked for an appropriation of $111,000, which will probably be granted. The City Council has, in addition, made an appropriation of $45,000 for an Infectious Diseases Hospital, which is now awaiting the approval of the Mayor. The general public, represented by the Charity Organization Society and other public organizations; the medical profession, through the Medical and Chirurgical Faculty of the State; the public press, and the Health department joined forces in demanding the hospital for infectious diseases, and the City Council yielded to the universal demand. The only danger of failure to secure the hospital comes from a portion of the profession itself, which apparently does not approve the plans of the Health department. It is to be regretted that a difference of opinion concerning the plans of construction should jeopardize the entire work.

The greatest sanitary need of Baltimore at present is a comprehensive sewage system and the abolition of the abominable privy system, which contaminates the atmosphere and the soil. Here, also, one of the most powerful hindrances to progress is the disagreement as to what system of sewerage should be adopted. Much of this disagreement is due to the want of definite knowledge upon sanitary matters possessed by the majority of the profession and the public. It is assumed that a successful physician, a skilled surgeon, or an accomplished obstetrician necessarily commands all available sanitary knowledge, forgetting that modern hygiene is as truly a specialty as any of the other branches to which physicians pay special attention. In

a general way the cultivators of one medical specialty defer to the opinions of experts in another, but anyone considers himself competent to give an opinion *ex cathedra* upon grave and complex problems in hygiene, forgetting that the studies of the sanitarian are often in lines widely diverging from those of the physician, surgeon, or accoucheur.

The powers of the Health department are ample in the restriction of infectious diseases, but so far as the suppression of dangerous nuisances is concerned the laws are very defective.

A large contingent of the medical profession has repeatedly demanded that the sanitary inspectors of the Health department should all be physicians, and the demand seems a reasonable one. At present the majority are non-professional men, but it is only fair to admit that their duties are performed with as much intelligence, promptness, and tact as could be expected of physicians at the same salary.

There is a tendency among the profession and the public to regard all public officials with suspicion, to discredit their efforts, to doubt their integrity, and often to reflect upon their personal character. The Baltimore Health department has suffered in common with others from this unjust tendency, and has often for this reason been seriously hampered in its sanitary work. The present Health Commissioner is, however, an official of experience, having entered the sanitary service twenty-one years ago. He has served as vaccine physician, assistant commissioner, and for the last two years has been at the head of the department. He is thoroughly familiar with his duties and the requirements of the position. He seems to be also *en rapport* with the great mass of the profession and the public in the common effort to place and keep the city in first-class sanitary condition. Should this spirit of mutual help and trust be maintained, I think the citizens of Baltimore can look with equanimity upon any threatened or even actual invasion of their city by the East Indian terror.

GEORGE H. ROHÉ.

THE METRIC SYSTEM.

To the Editor of THE MEDICAL NEWS,

SIR: I believe the suggestion made by Dr. Eli H. Long: "Aids to the Adoption of the Metric System in Prescription-writing" (THE MEDICAL NEWS, March 25, 1893, p. 332), is one calculated to do much more harm than good in the rational adoption of the metric system. That the metric system is far superior to any other system of weights and measures is acknowledged by all scientific men.

The only way to secure its adoption, however, is for the instructors in medical schools to teach their students the doses of drugs in the metric system, and in the metric system *only*.

To use the metric system rationally we must think in the metric system, and banish as soon as possible all thoughts of grains and drams from our minds. For those who are used to the old system this can be accomplished in the following manner:

Do not try to make exact equivalents in the two systems, but try to substitute in your mind the following as standards for dosage:

Instead of	gr. $\frac{1}{60}$	use	0.001	gm.
"	" $\frac{1}{100}$	"	0.0005	"
"	" j	"	0.05	"
"	" v	"	0.25	"
"	" x	"	0.50	"
"	" xv	"	1.00	"
"	" f℥j	"	5.00	c.c.

Of course, it is acknowledged that 0.25 gm. is nearer gr. iv than gr. v, and that 0.50 gm. is nearer gr. viii than gr. x, but the object is to dismiss the grains and English measures entirely from our minds and think in the metric system. Having once adopted the new standard of dosage, it is the easiest thing in the world to calculate the dose: a 5 per cent. solution gives 0.25 gm. to the dose of 5 c.c., or one teaspoonful; a 10 per cent. solution gives 0.50 gm. to the dose, and a 20 per cent. solution gives 1 gm. to the dose. For the milligrams and smaller fractional doses, the full amount of drug is easily calculated from the number of doses.

As to the sizes of the bottles, it will not take long to change them, if the metric system comes into considerable use.

In the attempt to bring about a reform there is really nothing ever gained by making a compromise. It generally makes things worse all around for a time, and puts off to a still later date the accomplishment of the wished-for reform.

Yours very truly,

DE LANCEY ROCHESTER, M.D.

BUFFALO, N. Y.

NEWS ITEMS.

The Pan-American Medical Congress. Section on Diseases of Children.—The organization of this Section is complete and the work of arranging a program is well advanced. Numerous valuable papers have been promised and the success of the meeting is assured. Physicians interested in diseases of children are cordially invited to attend these meetings, which give promise of great interest both to the specialist and general practitioner. Any American physician desiring to read a paper will please communicate at once with the Secretary, who will be pleased to furnish all needed information. Executive President, Dr. John M. Keating, Colorado Springs, Colorado; Secretaries, Dr. F. M. Crandall (English-speaking), No. 113 W. 95th Street, New York, N. Y.; Dr. Damaso Lainé (Spanish-speaking), Media, Pa.

Correction.—In consequence of a misapprehension it was stated in THE MEDICAL NEWS of last week that the bill providing for the appointment of a Medical Council and three State Boards of Medical Examiners had finally passed the Legislature, whereas, at the time, it had but passed the House of Representatives.

Sir Joseph Lister has been elected a foreign member of the French Academy of Sciences, in the place of the late Richard Owen.

Erb, of Heidelberg, has been proposed as the successor of Kahler, deceased, in the chair of Clinical Medicine at Vienna.

Siemerling, of Berlin, has been elected Professor of Psychiatry and Director of the Psychiatric Clinic at Tübingen.

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ORIGINAL ARTICLES.

CLINICAL LESSONS.

Post-Hemiplegic Pain; Pre-Hemiplegic Pain; Post-Hemiplegic Joint-Disease; Post-Hemiplegic Nodes.

(*Clinical Lesson from the Infirmary for Diseases of the Nervous System.*)

BY S. WEIR MITCHELL, M.D.,
OF PHILADELPHIA.

THE case I show you to-day is one of considerable interest on account of the early date at which joint-disorder followed an attack of hemiplegia. I shall presently speak to you further of its nature and explanation. It reminds me to ask your attention to pain among the prodromes and sequels of hemiplegia; also as to a somewhat novel matter, the nodes which occasionally appear as sequelæ of this paralysis.

The late Prof. John K. Mitchell first called attention, in 1831, to the production, through spinal injury and sequent disease, of joint-lesions often indistinguishable from the lesions of rheumatism. Allison, in 1838, described joint-lesions following hemiplegia. Drs. Morehouse, Keen, and myself reported numerous examples of joint-trouble caused by peripheral nerve-lesions, and since then I and others have added largely to the literature which deals with nutritive changes occasioned, early or late, by cerebral and spinal disease, and by the diseases or traumas of nerve-trunks.

It is now generally admitted that the joint-disorders which occasionally follow hemiplegia from cerebral lesions owe their origin to a descending degenerative change involving the motor tract and finally the cord. If this be so, we must also admit the fact that these changes are in certain cases very rapid, as I have now seen at least four cases, all of right-sided cerebral lesion, in which joint-lesions, one or more, followed within four days. Then there is, too, a small group of cases not alluded to in the books, in which the sequence is as follows:

1. Unilateral muscular or fibroid pain and soreness.

2. Tenderness of certain joints, slight swelling, and pain only on one side. Repeated attacks strictly limited to one side.

3. Subsequent cerebral clot and paralysis of the painful side.

4. Increase of joint-lesions on the palsied side, and generally chronic unilateral joint-trouble. Absence of cardiac disease.

Another type, which, like this, gives us occasion enough to reflect, is this:

1. Long-continued or occasional muscular aches on one side only, without heart-disease or gout.

2. After a year or two hemiplegia of the side thus previously affected.

3. Secondary joint-lesions on the same side, becoming chronic.

In a third class, which is somewhat rare, we have as an *immediate* prodrome of hemiplegia, acute pain in the muscular masses, so as to be mistaken for muscular rheumatism, but confined to the side which within forty-eight hours becomes hemiplegic. The following brief case-sketches may answer for illustrations:

C. S., fifty-two years of age, a housekeeper, in general good health and free from cardiac or renal and gouty troubles, was attacked in 1880, in the early spring, with pain and soreness in the shoulder muscles and in the thigh of the right side. The attack was sharp, but lasted only a week. It was repeated a month later, and again and again, with more or less swelling and tenderness of the shoulder, finger-joints, and knee on the right side only. The last two attacks were accompanied with headache and slight vertigo. The final attack was limited to severe ache in the arm and leg, and after three days of great pain there was sudden loss of power of the whole right side, with loss of sensation. This last was brief; but the motor loss was more grave, and there was never entire recovery of motion in either leg or arm. On the fifth day the shoulder became swollen and tender, and a week later several of the finger-joints suffered in like manner and finally the knee. There was early and, at last, late rigidity of the arm-muscles. None of the joints got well. All passed into a chronic state of subacute inflammation, and death followed a second hemorrhage within eighteen months.

In this case the joint-lesions were seen before and also after the cerebral lesion.

M., sixty-four years old, a physician, was well as to heart, kidneys, and arteries, which to appearance were unusually free from disease. For two years before his paralysis he was subject to nearly constant pain in the muscles of the right arm and leg; occasionally, but rarely, he had slight pain in the knee-joints and shoulder-joints; none in the smaller articulations. Occasionally the pain was so severe in all of the right-side muscles of limbs and trunk as to confine him to his bed for a week.

In June, 1869, a violent bout of pain, still only on the right side, was followed on the second day by sudden and incomplete loss of use of the right leg and arm, without disturbance of consciousness or of sensation. Within the next three years he had three attacks of hemiplegia, none severe, but each of them preceded by a similar onset of muscular pain and tenderness. He finally died of pneumonia.

I saw many years ago a middle-aged woman who was seized, with no known cause, with violent pain in the right arm and leg. There were no joint-lesions. The pain was agonizing. Within thirty-six hours she had a quite complete attack of hemiplegia on the same side, after which the pain slowly faded away and never returned. She made a good recovery and died years after, of lung-disease.

I could readily add to these cases. To observe one-sided pain or joint-lesions as prodromes or remote antecedents of cerebral lesions is not exceedingly rare. I have seen one such case within a year, and in it the muscular pain, as is not uncommon, slowly passed away with the paralysis.

It is, of course, easy to dismiss these cases as rheumatic, but this will hardly satisfy the modern clinical observer. Certainly they should suggest inquiry as to whether or not incipient brain-lesions, finally productive of paralysis, may not, either directly or through an influence on the cord, occasion morbid phenomena simulating rheumatic symptoms.

It is, of course, conceivable that the many cases I have seen may, one and all, represent the coincidental occurrence of unilateral rheumatism with a sequence of hemiplegia. But there is another explanation which is possible, and for this reason I desire to call attention anew to the antecedents and consequences of certain hemiplegias. If, as I and others have seen, inflamed joints may follow within from one to four days upon certain hemiplegias, it seems unlikely that their presence is due to spinal changes, or to these alone, unless these changes be far more rapid than we at present conceive them to be. If they are due directly to the immediate influence of the brain-lesion or to its effects on the yet unaltered cord, then even the more remote joint-lesions may have a like origin. Really, it does not as yet seem to be quite sure that the cord is always or alone responsible, or that the joint-troubles as well as the pain may not have their origin in the cerebral centers.

Another rare consequence of hemiplegia of late origin is the, as yet, undescribed occurrence of nodes on the periosteum. These still further add to the rheumatic picture presented by certain palsied limbs. I speak of these nodes as being, so far, undescribed, for in a wide search I find no mention of them, and they appear thus far to have escaped the attention of clinical observers.

I first saw them some years ago in a workman about forty-five years old. He was a plumber, but had no evidence of lead-poisoning, which, in fact, is scarcely ever seen in this class of mechanics. The patient had never had any genital malady and was in remarkable health until he had, after over-work in hot weather, an attack of left hemiplegia. Unconscious for a day, he made a fair recovery, except as to his arm, in which during two or three months developed late rigidity and joint-lesions. The knee, which is rarely affected, suffered, although slightly. In examining with care the state of this man's joints I found, about three inches above the ankle, an elongated, very tender node about an inch wide, and at the insertion of the deltoid a second, still more prominent. Interested in these lesions, I asked Dr. Maury, as an expert in syphilis, to re-examine the case. He came to the conclusion that there were no evidences of this malady. A long and active course of treatment with iodids and mercury failed to alter the nodes in the least degree, and I came at last to the conclusion that, like the joint-lesions, they were indirectly the offspring of the cerebral malady. I have since then seen similar cases, but of these I have no notes. In 1891, however, I saw a striking case which in very interesting forms illustrated both this lesion and the earliest case of post-hemiplegic joint-alteration, if it was that, which I have ever seen.

G. W., fifty-eight years of age, was a manufacturer in active business, of good health and habits, of moderate indulgence as to wine and tobacco. He has never had syphilis, and there was no obvious disease of the heart or vessels, and no renal disorder. He is subject at times to have, for a week or more, deposits of urates in the urine passed at night. On July 20, 1891, after a severe mental and moral strain, which necessarily lasted during four hours, he went to a friend's house to rest. As he was about to lie down on a bed, he reeled and fell. The left arm, on which he leaned against the bed, was somewhat twisted, and possibly strained, as he fell on the bed. He was found unconscious, and with entire paralysis of the left side. In twenty-four hours he was conscious of his surroundings. His speech was long affected, and the tongue was protruded far to the left. The leg recovered fairly well, but, when first seen by me—November 10, 1891—the foot still dragged a little; the arm was helpless.

The day after the paralysis he felt pain in the shoulder and down the outside of the arm. From this date he had increasing pain, swelling, and tenderness in this joint. In August the elbow became painful, and early in September all the joints of the left hand were inflamed. There was early rigidity, and finally, later stiffness, with violent contraction of the forearm muscles, so that the nails indented the palm. There has been little gain as to these symptoms, but the pain has become less severe. At the deltoid

insertion a node, three inches by one, of irregular form and quite prominent, could be felt. It was plainly periosteal and painful in varying degrees. On the ulna, above the wrist, was a second node, and above it a smaller one, both very distinct and also tender.

The foot was somewhat contracted. All the nails grew very slowly for two months. Sensation is slightly defective as to touch only on the palmar faces of the first and second digits.

The tongue is still protruded to the left, and speech is not quite perfect.

When last seen, in May, 1892, there was less pain, but all of the joints of the left arm were tender, swollen, and useless. The nodes were smaller.

This case seems to me interesting. It is possible that the shoulder-joint may have been twisted in the fall, and that this accounts for the very early inflammation which, later, may have owed its continuance to the paralysis. I have, however, seen one case in which the joint-lesion came on within thirty-six hours, and others in which it came on within four days. Therefore, it is possible that in this case the shoulder-trouble may have been the immediate offspring of the brain-lesion.

The mechanism of the production of these very common incidents of hemiplegia is still a difficult question. Perhaps a careful study of the post-mortem chemical state of the muscles may help us. But it should come immediately after death. It is quite possible that the nutritive disturbances of a palsied limb may evolve, locally, products which give rise to these pseudo-rheumatic results, and as nerve-lesions clearly alter the skin-secretions, as I have elsewhere shown, they may as likely evolve within the limb chemical products favorable to joint-disease. It is not enough to say that these are caused by altered nutrition. The nodes I describe are also one more addition to the resemblance of a palsied to a rheumatic limb, and, small as is their importance, it is, I think, of value to note their occasional presence.

When acute unilateral pain immediately precedes the hemiplegia of the same side—and such a sequence should lead us to reconsider the more doubtful instances, in which pain and joint-lesions more remotely but more continuously antedate the palsy—I have myself no doubt that pain and many other sensations may be of cortical origin.[1]

Honors to Virchow.—The visit of Professor Virchow to London was simply a series of ovations, banquets, and receptions. Honors and attentions were showered upon the great man from all sides. The Croonian oration was a most brilliant address. Among other distinctions the honorary degree of D.C.L. was conferred upon Virchow by the University of Oxford, and that of Doctor of Science by the University of Cambridge.

[1] See an interesting paper on "Brain-itch," by Dr. Bremer, of St. Louis, Review of Insanity and Nervous Diseases, December, 1892.

CLOSURE OF THE EAR BY GROWTHS OF BONE; REMOVAL OF BONY OBSTRUCTION; CURE OF OTORRHEA AND OF DEAFNESS. THREE CASES; DESCRIPTION OF OPERATIONS, INSTRUMENTS, Etc.

By ROBERT BARCLAY, A.M., M.D.,
of St. Louis, Mo.,
Consulting Physician in Diseases of the Ear in the City Hospital, St. Louis; Aural Surgeon to the House of the Good Shepherd, St. Mary's Infirmary, Mater Boni Consilii Deaf and Dumb Institute, Missouri Baptist Sanitarium, South Side Dispensary, etc.

On assuming the care of a case of inflammation of the middle ear, or deep meatus, the practitioner may felicitate himself if he find the lumen of the canal so far preserved as to permit of easy inspection and local treatment of the affected parts. In the more severe cases this physical condition rarely obtains, except in the earliest stages, at which time it is unfortunately popular for the patient to seek relief, first, by local maltreatment, self-inflicted, under the direction, possibly, of the apothecary, the domestic adviser, or other officious layman. As a rule, such folly on the patient's part but increases his suffering, inducing inflammation and swelling of the soft parts of the canal, with reduction of its lumen; so that by the time he comes under the care of the physician there may be a narrowing of the caliber of the canal so great as to render management of the case a task of great difficulty. But even if this process should have advanced so far as to entail complete membranous atresia of the canal before presenting to the physician, it may nevertheless be deemed far preferable to that condition occasionally met with in these cases, in which inspection and local treatment of the inflamed parts are rendered extremely difficult and unsatisfactory, if not quite impossible, through reduction of the lumen of the canal by a growth of bone from the walls. In such a case progressive exostosis or hyperostosis may have already advanced so far that atresia of the canal is imminent, sometimes established.

Such a condition may, indeed, at any time be very unexpectedly encountered. For instance, I have already met with it four times. In this emergency prompt and active interference on the part of the attending physician is demanded, as hearing, and even life itself, may be lost by temporizing—as witness, for instance, the significant case reported in the *Boston Med. and Surg. Journal* of April 18, 1878, by Dr. J. Orne Green, of Boston, Massachusetts.

As regards this interference, however, one may well wonder at the disclosures of medical literature. A search through the older writings on the subject of closure of the ear by a growth of bone brings to light a most astonishing record of the struggle of our professional ancestors with this

stubborn enemy—a record which to him who reads between the lines proves suggestive of the nerve and desperation with which they wielded the rude and inefficient therapeutic weapons of their day in this serious conflict. To those afflicted with the disease in former days, grave must have been the prognosis declared, to compel, as it did, their submission to the intense and prolonged agony inevitable upon the surgical operation before the days of anesthesia and perfected mechanical arts.

Consider, on the other hand, the manifold advantages of our modern method of dealing with such aural bony growths by means of the dental engine. In operating with this instrument, the hand-piece may be held and guided like a pen, skill and attention being addressed principally to directing the reamer, or burr, inasmuch as this operates, with but slight manual pressure, mainly by the rapid revolution of its cutting edges. A little experience in the use of the dental engine and drill is sufficient to educate the operator in determining by touch and resistance the nature or condition of the tissue upon which the tool is operating, thereby affording another and more reliable indication as to the desirability of extending or terminating the process of operation at that particular spot. With this there is a minimum of risk of injury to contiguous or neighboring healthy parts through direct or through transmitted force. In careful hands this instrument cannot slip away or plunge. No concussion, no cracking, no roughness, no projecting spiculæ, no splinters of bone—only a smooth, clean-cut surface marks its trail.

These, and doubtless many other, advantages of this resource will be obvious, it is hoped, in the practical demonstration of its employment in the cases herewith reported, which are fairly typical of the disease and of the modern method of mastering it.

CASE I.[1] *Bony growth almost closing ear; purulent inflammation of middle ear; deafness, gradually increasing; removal of bony obstruction; cure of otorrhea and of deafness.*—This patient was a tall, well-proportioned, ruddy-complexioned German, twenty-five years of age, and unmarried, whose occupation necessitated frequent and prolonged out-of-door exposure. In the month of December, 1888, he called, seeking relief from otorrhea and gradually-increasing deafness of the left side, and for removal of a tangible obstruction from the affected ear. It was while indulging in his long-established, pernicious habit of picking his ears with a brass pin, that he first discovered this condition of the ear.

The patient was abstemious in his habits; had always been healthy up to the time of the present illness; and his family physician affirmed that neither the patient nor his family had at any time given any evidence of congenital or acquired constitutional or specific morbid taint.

The aural trouble had begun in the early spring of the preceding year, by the formation of a "boil" in his left ear, "which had been 'mattering' ever since." By local maltreatment, and by neglect, for which he himself was alone responsible, his malady was aggravated.

On the first otacoustic examination, it was found that with the affected ear he could hear ordinary voice at ten feet, and a forty-eight-inch watch[1] at less than a distance of one inch—a reduction of hearing-power for the watch to less than one-two-thousandth of the normal.[2] Tests with the tuning-fork demonstrated that the deafness was due not to impairment of function of the auditory nerve, but rather to some mechanical interference with the transmission of sound-waves to the nervous apparatus of hearing. The hearing-power of the right ear was found to be slightly impaired by alteration of tension and of mobility of its transmitting mechanism — due, doubtless, to fatigue and exposure incident to the pursuit of his occupation.

Just within the outer extremity of the left external auditory canal, the lumen appeared almost wholly obliterated by the presence of some foreign body or other adventitious substance. Beyond this, however, a purulent, slightly mephitic discharge was found oozing. The obstructing body seemed extremely hard and immovable, and was covered with a thin, glistening, pearly membrane, not hyperesthetic, and but slightly movable upon it. The lumen of the canal was found almost closed by it, with the exception of a very narrow passage, crescentic on transverse section, forming about three-fifths of a circle. The greatest width of this passage was at the posterior-inferior canal-wall and was two-thirty-seconds of an inch wide, while at the anterior-inferior and posterior-superior canal-wall, its width was one-thirty-second of an inch. The tumor, or exostosis—for such it proved to be—was attached to the anterior-superior wall of the osseous meatus. A small silver probe, bent into a curve near its bulb, could be passed inward under the obstruction, and, on one side of it, upward. Exploring with this, it was found that the surface of the superior canal-wall, on the inner side of the obstruction, merged gradually into the inner surface of the tumor, continuing thus downward toward its lower part. On its outer side, however, high up, at the line of junction of the tumor and superior canal-wall, and just within the drooping edge of the cartilage of the concha and

[1] Case presented to the St. Louis Medical Society at its meeting, December 21, 1889; reported in abstract in its official organ, the St. Louis Courier of Medicine, January, 1890.

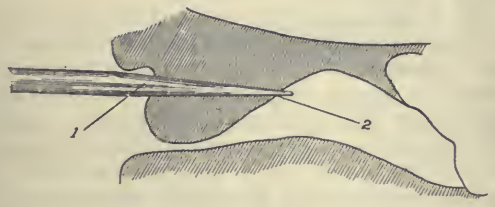
[1] By "a forty-eight-inch watch" is meant a watch whose ticking is heard by the normal ear as far distant as forty-eight inches.

[2] As *the intensity of sound varies inversely as the square of the distance from its source*, hearing-power for a sound of fixed intensity varies directly as the square of the distance (from the ear to the source of sound) at which that sound is heard; as, for example, in the present case, in which the distance at which the watch was heard was less than $\frac{1}{48}$ of the normal, which, squared, would give the hearing-power for the watch: "less than $\frac{1}{2000}$ of the normal."

meatus, there was, on the contrary, a distinct transverse groove. (1, Fig. 1.)

The diagnosis of progressive exostosis of the external auditory canal with purulent otitis media was obvious. Deafness and probable premature death, if the tumor were not removed, were prognosticated, and an immediate surgical operation was recommended.

Fig. 1.



The dental engine was used—one with an extra-heavy sleeve, cable, and hand-piece, designed for minor surgery, and manufactured by the S. S. White Dental Manufacturing Company[1] of Philadelphia and New York.

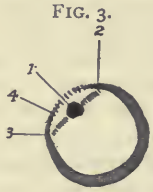
The tools, burrs, reamers, etc., kept in stock, for use with the engine selected, being too large and coarse for my purpose I hastily constructed one out of a dental plugger (Fig. 2), so shaped as to operate either forward or laterally, slowly and safely.[2]

Fig. 2.

Before the operation, there had been prepared carefully a large number of swabs or dossils of absorbent cotton-wool upon the extremity of long, slender splinters of wood, for instant use when wanted for removing blood or other discharges. As gas-light was, upon this occasion, to be employed for illuminating the operative field, chloroform, being non-explosive, was selected as the anesthetic.

The operation was begun by boring with the tapering reamer (Fig. 2), almost directly inward and a trifle downward (1, Fig. 3) from the middle point of the groove on the upper, outer side of the tumor (1, Fig. 1; 1, Fig. 3). Through the growth, which proved to be very hard—in fact, a typical "ivory exostosis"—the reamer made progress slowly, but was at length felt to have perforated it (2, Fig. 1). It was now pressed laterally, broadside, against, first, the posterior (2, Fig. 3), and then the anterior portion of the neck of the tumor (3, Fig. 3), which had remained between the first drilled canal (1, Fig. 3) and the sides of the base. The greater portion of the growth was thus detached; and was then removed from the lumen of the canal; after which the canal was thoroughly cleansed with a stream of very warm carbolized water. The cotton-wool dossils were then used in rapid succession to dry the canal sufficiently for brief inspection. The stump of the tumor found remaining was then brushed from side to side with the broad side of the reamer, parallel to what would have been the

Fig. 3.



normal surface of the canal-wall at the base of the tumor. This was continued until the stump of the tumor was reduced as nearly to the normal surface of the canal-wall as the swollen soft tissues would permit (4, Fig. 3). An aural speculum was then readily introduced, and the macerated drum-head could for a moment be seen. Hemorrhage was finally checked by irrigation with a stream of sterilized hot water, after which the parts were carefully dried, a generous quantity of powdered boric acid insufflated into the canal, a dry antiseptic dressing applied to the auricle, and the patient put to bed.

Owing to the profuse hemorrhage which persistently filled the auditory canal from the time when the drilling had begun, the operation was of necessity performed, virtually, without any visible guide, by touch alone; and under the circumstances it was deemed hazardous and unnecessary to attempt at that time removal of the deep-lying portion of the stump of the tumor by drilling toward the base of the brain in the swollen soft tissues of the upper canal-wall with the sharp point of the reamer, which alone could effect this. This will explain why, after the soft tissues of the canal had retracted to their normal position, a very small portion of the stump of the tumor was found unremoved, projecting slightly from the canal-wall. It was, however, so small, so invisible to bystanders, and interfered so imperceptibly, if at all, with the performance of any essential function of the parts, that another operation seemed unwarrantable.

The after-treatment of the ear consisted mainly in flushing, sometimes with a solution of mercuric chlorid, sometimes with hydrogen dioxid, followed by insufflation of an impalpable powder of boric acid. Redundant growth of tissue was checked by applications of silver nitrate.

[1] This company manufactures a surgical engine of the Bonwill pattern also, a dental engine reinforced with a crank for hand-power, whereby much greater force, and a speed of twelve thousand revolutions can be obtained. The Bonwill dental engine is readily, and at trifling expense, convertible into the surgical engine. The hand-piece tools designed for minor surgery, adjustable to the engine, are greatly varied in form and size, and are well described in the circulars issued by the manufacturers.

[2] This tool may be briefly described as follows: It is constructed of soft steel; is four and one-fourth inches long; projects two inches beyond the extremity of the hand-piece, when adjusted therein; has, at the end, a working surface one inch long, which, irregularly and shallowly grooved or fluted longitudinally, tapers to a quadrilateral-pyramidal point one-thirty-second of an inch in diagonal. The shaft of the tool is three-thirty-seconds of an inch indiameter. The grooves are shallow, small, and irregular; and no opportunity was afforded to improve the instrument by tempering, which may have served to protract the operation somewhat.

The patient now considers his hearing better than it was before he first suspected the development of his aural disease.

The part of the tumor removed entire at the operation is supposed to have been mislaid by the gentleman to whom it was handed for inspection, and has never been recovered. It may, however, be stated that it closely resembled that described in the record of the case next following.

CASE II.[1] *Bony growth almost closing ear; purulent inflammation of middle ear; deafness, gradually increasing; removal of bony obstruction; cure of otorrhea and of deafness.*—A clerk, twenty-one years of age, unmarried, in excellent general health, consulted me in the month of June, and gave the following history:

Three years previously his right ear had "left stopped up" for several days, when, without any treatment, it "opened up again." With the exception of pruritus of the auditory canal, no further aural discomfort had been experienced until three weeks before the time of his first visit to me, when it had "stopped up" as in the previous attack, and had become quite deaf. He had then picked the affected ear with a match, and had "made it sore." Afterward he had dropped melted vaselin into it. To relieve the itching in the right ear, he had long been in the habit of "picking" therein with a match, toothpick or brass pin. For four days and nights preceding his first visit to me this ear, although not tender, had been painful; the pain, which was worse on lying down, and at night, had been so severe as to prevent sleep during the greater part of the night preceding that visit. The patient had long been in the habit of using tobacco freely. On otacoustic examination, it was found that with the affected ear he could hear a forty-eight-inch watch upon pressure-contact only, and loud voice at a distance of three feet. On testing with tuning-forks, the function of the auditory nerve seemed unimpaired.

Physical examination showed that the canal of the affected ear was occluded, at about one-quarter of an inch from its outlet, by some adventitious substance, which proved to be an exostosis growing from the posterior-inferior wall of the osseous meatus.

This tumor had already developed so far that the only portion of the lumen of the canal left unoccupied by it was a narrow passage, concentric on transverse section, extending around the tumor for about two-thirds of the circumference of the canal, both of the horns of this crescentic passage pointing downward and backward. At its broadest part, which is at the anterior-superior canal-wall, this passage measured in width about three-thirty-seconds of an inch. By exploring the space beyond, with a curved probe, the tumor appeared to be somewhat pedunculated.

On searching for the probable cause of the pruritus, which had led to the formation of the habit of "picking" the affected ear, and for a source of reflex aural irritation—which had perhaps otherwise contributed to the development of the exostosis, by inducing vaso-motor disturbance—nothing seemed obvious except a very carious upper molar tooth upon the affected side.

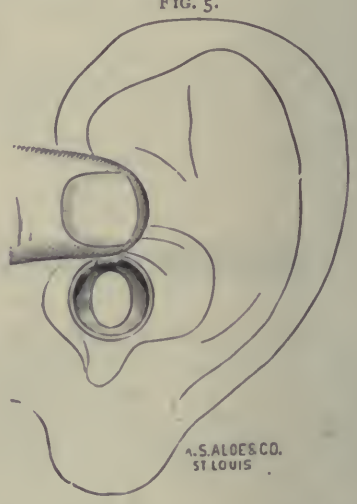
Three days after the patient's first visit, the growth was removed by surgical operation.

Except when stated to the contrary in the following description, the operation was in detail similar to that just described.

Before penetrating the tissues the cavity beyond the tumor was cleansed by syringing through the small passage of the canal with a hard-rubber syringe of special construction.[1] From the space beyond the tumor this instrument forced away a mass of cerumen; desquamated, macerated epithelial detritus; and pus, somewhat mephitic. All the parts having been thoroughly cleansed, on the aseptic principle, and then as far as possible dried with the absorbent cotton-wool dossils, a dipper-shaped, aural speculum (Fig. 4) was introduced into

FIG. 4.

FIG. 5.



the auditory canal, in such a position that the handle lay snugly against the auricle, behind the tragus, and upon the site of the normal spina helicis, where it was retained by pressure of the finger of one of the physicians assisting (Fig. 5). This was the second time the instrument had been used.[2] The dental

[1] Case presented to the St. Louis Medical Society, at its meeting, June 25, 1892; reported in abstract in its official organ, the Medical Fortnightly, October 1, 1892.

[1] This was made for me by the W. F. Ford Surgical Instrument Company, of New York, expressly for the purpose of injecting a fine and copious stream of liquid through a very small perforation, sinus, or other passage—for example, such as that in the present case. It has several different nozzles: is fashioned after the principle of the middle-ear syringe of Dr. Clarence J. Blake, of Boston, Mass. (Amer. Journ. of Otology, N. Y. 1880, ii. 5–8), and, like this, has a small glass cylinder, adjustable between the nozzle and syringe proper, whereby one can, at will, inject, through a very narrow opening or canal, a small and specified amount of a medicated liquid, without necessarily first introducing any part of this liquid into the syringe proper.

[2] This little instrument had been designed and constructed by me especially for, and was first used in, the operation in the case reported later, which chronologically takes precedence of this. The dimensions of the instrument are these: Of the slightly curved handle—length, one inch; least breadth, three-sixteenths of an inch; greatest breath, four-sixteenths of an inch. Of the speculum proper—Length, twenty-thirty-seconds of an inch;

engine used here was the same as that in the case first reported, but the reamer with which the pedicle of the exostosis was divided (Fig. 6) was different from the tapering one before used (Fig. 2) in being deeply, sharply, and regularly fluted, hard-tempered, and, at the thickest portion of the working surface and shaft, four-thirty-seconds of an inch in

Fig. 6.

diameter. It had been made for this particular operation by a skilled mechanic, a former patient of mine.

With this reamer, the drilling was begun at the posterior-inferior part of the tumor, almost against the canal wall, the tool being directed inward, upward, and forward, until it was felt to have emerged from the other side of the growth; when, by the lateral motion of the reamer, broadside, as in the preceding case, the pedicle of the tumor was divided. The detached portion was then removed from the canal, and has been preserved. It is irregular in form, and measures, approximately, five-thirty-seconds by six-thirty-seconds by eight-thirty-seconds of an inch.

After mapping out as carefully and accurately as possible the site and shape of the remaining stump, a tool (Fig. 7), bearing a round, fluted burr, six-thirty-seconds of an inch in diameter, was employed to dress off salient points to the plane of the normal surface of the canal.[1]

Fig. 7.

The parts were now freely syringed with very warm sterilized water, and afterward cleansed with hydrogen dioxid until hemorrhage ceased. The canal was then filled with loosely insufflated impalpable powder of boric acid, and finally closed snugly with a wad of absorbent cotton-wool.

Incidentally, it may be remarked that the hydrogen dioxid used seems to act as a hemostatic. As a deodorant, disinfectant, and antiseptic, it has, in my experience, given entire satisfaction.

The operative field having from the outset been hidden from sight by persistent hemorrhage, the operation was done, virtually, with no visible guide, by touch alone.

Within two days after the operation the hearing-distance of the affected ear for a forty-eight-inch watch had increased to three inches. Upon the third day the irregular mass of ragged, soft tissues overlying the site of the tumor was removed, close down to the surface of the canal-wall. Several days after this the carious molar tooth was extracted.

Treatment directed toward the purulent otitis media availed so far that, ere long, there presented indications for a compact dressing to the perforation of the drum-head. A paper disc or dressing was then applied after the manner suggested by Dr. Clarence J. Blake, of Boston.[1]

Within three weeks after the time of the operation the canal-wound had healed, the perforation of the drum-head had closed, and the paper disc had been removed. Five weeks later, the hearing of the affected ear, for voice and whisper, proved to be almost normal; and with this ear the man could hear the forty-eight-inch watch at eleven inches.

Case III.[2] *Bony growth completely closing ear; purulent inflammation of the middle ear; deafness, almost total; artificial auditory canal bored through five-eighths of an inch of bone; cure of otorrhea and of deafness.*—This patient, a man, aged thirty years, unmarried, following an out-of-door occupation, and having had good general health, first applied for treatment in the month of January.

In March of the preceding year he had been struck over the left eye and ear by a falling pine-knot, the left auricle being thereby contused and the attachment of its crus helicis severed. For three weeks thereafter he had suffered discomfort in the injured ear, when purulent otorrhea became established. This continued for six weeks, when, without medicinal treatment, it ceased of itself. The crus helicis became attached to the skull, and healed with the formation of a large scar.

On a night of the following October, he was struck upon the occiput and inferior maxilla with a bar of iron; and fell unconscious. It is said that he sustained, at that time, a scalp-wound, and a compound comminuted fracture of the inferior maxilla. There are, however, reasons for supposing that he sustained other injuries as well; for after the occurrence his left nostril bled awhile, and he suffered pain and other discomfort in his left ear for a week, when a purulent otorrhea began. With some unknown remedies (prescribed and dispensed by a druggist, so-called) he suppressed the otorrhea, as he supposed, the ear in consequence feeling as if closed. It then became painful, the pain gradually increasing until his suffering became intolerable, when, in desperation, he "opened the ear" himself, with a needle, the otorrhea thus becoming reëstablished and continuing thereafter for a month, finally ceasing spontaneously.

After the removal of several sequestra and carious

diameter of lumen (caliber) at outer larger circular rim, twelve-thirty-seconds of an inch; at inner smaller elliptical rim (longitudinal) nine-thirty-seconds, (transverse) eight-thirty-seconds of an inch. A set of such aural specula can be obtained of Messrs. A. S. Aloe & Co., of St. Louis.

[1] This instrument was made expressly for this operation by Messrs. A. S. Aloe & Co., of St. Louis.

[1] See C. J. Blake: Report of the First Congress of the International Otological Society, New York, September, 1876, pp. 125–132. Also, R. Barclay: Transactions of the American Otological Society, Twenty-third Annual Meeting, New Bedford, Massachusetts, 1890, pp. 564-573.

[2] Case presented to the St. Louis Medical Society at its meeting, June 25, 1892; reported in abstract in its official organ, the "Medical Fortnightly," October 1, 1892.

teeth from the maxilla, its fragments united and the external wound soon healed. There persisted, however, in the left ear, tinnitus, autophony, and deafness, for the relief of which he, in the following January, placed himself under my care.

On otacoustic examination at that time, the hearing for the tuning-fork by bone-conduction was found better than that by aërial conduction in the left, worse in the right ear; and by aërial conduction, better in the right than in the left ear. He heard, at ten feet distance, loud whisper with the right, loud voice with the left ear. The hearing-distance for a forty-eight-inch watch with the right ear was fifteen inches. This watch was unheard by the left ear, even when pressed tightly against the auricle. It could, however, be heard by this ear after Politzer-inflation.

On physical examination of the left ear, the first thing to fix the attention was the scar at the crus helicis, and slight deformity of the auricle due to its contraction. The auricle was somewhat displaced downward and forward. Further, the left external auditory canal was found entirely closed by a hard, evidently bony septum, whose outer surface was twenty-thirty-seconds of an inch from the tip of the corresponding tragus. There was a small transverse dimple in the external surface of this septum just above the center, giving it somewhat the semblance of a hopper. The septum seemed bony throughout, and was covered with a continuous, tightly adherent dermal membrane.

Respecting the condition of the auditory apparatus of the left side, it was inferred that the essential portion, in the labyrinth, was intact, and that the transmitting mechanism—affected as it had seemed to be by Politzer-inflation—might possibly have so far escaped destruction as to be serviceable for better hearing in case the bony obstruction to the entrance of sound-waves thereto should have been removed; and it was thought that the latter might be effected by operation, and so the hearing improved.

It was purposed to do two operations: one with a view simply to establishing an opening through

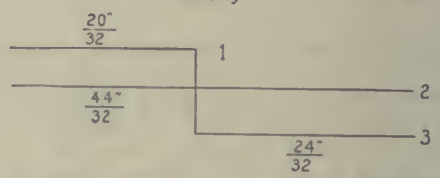
FIG. 8.

the bony septum of the canal, whereby the deeper spaces might be placed in an aseptic condition, and the landmarks for a concluding operation be the better determined; the other, the finishing one, with a view to enlarging the channel first made until it should equal in diameter the lumen of the canal of the other ear; and then to insert and retain a suitable canula-eyelet, as it were, of platinum or of gold, similar in shape to one of hard rubber (Fig. 8) made for similar indications in a case of membranous atresia auris, pathologically unique, upon which I had operated.[1]

[1] See case of "Tubercular Syphilide of the Auricle—becoming Serpiginous—with Ulceration and Sequestration of the Cartilage of the Concha, Tragus, and Canal, followed by Membranous Atresia: Deafness; Operation; Cure," Journal of Cutaneous and Genito-Urinary Diseases, New York, March, 1888, pp. 81-86.

The patient having consented to submit to surgical interference, there were to be determined, as carefully as possible, the dimensions of the operative field; the depth to which it was permissible to trespass, and the direction in which one might proceed to best advantage, without incurring unnecessary risk. For with all accurate data possible under the circumstances, the minimum of risk was at best necessarily great. In the unaffected (right) ear, the distance from the tip of the tragus to the drum-head was one inch and twelve-thirty-seconds—forty-four-thirty-seconds of an inch (2, Fig. 9). In the affected (left) ear, the distance from the tip of the tragus to

FIG. 9.



The figure is 50 per cent. larger than actual measurement.

the outer surface of the bony obstruction was twenty-thirty-seconds of an inch (1, Fig. 9). Assuming, then, as equal in the two ears, the distance from the tip of the tragus to the site of the drum-head, the difference between the former measurements (forty-four-thirty-seconds and twenty-thirty-seconds of an inch)—or twenty-four-thirty-seconds of an inch (3, Fig. 9)—would be the distance from the outer surface of the bony obstruction in the left ear to the site of its corresponding drum-head—the limit, in depth, of the operative field. This was presumed as one condition of the operation.

The determination of the direction and lateral dimensions of an artificial auditory canal, however, was a problem far more serious and difficult, particularly as the auricle upon the affected side had, through injury, been displaced and distorted, and no longer corresponded in position and form with its mate on the other side. Notwithstanding, a solution of the problem was attempted thus: First, a thorough familiarity with the peculiar configuration and proportions, absolute and relative, of the healthy (right) ear was acquired. Then, a careful estimate was made of the probable degree of displacement and distortion of the injured (left) auricle—for the septum came rather close to the outlet of the canal, thus rendering uncertain that landmark. Assuming, then, that the left ear had been, originally, *mutatis mutandis*, the counterpart, proportionally, of the right, due allowance was made for the amount of displacement of the left auricle as estimated, and the resultant was accepted as the proper configuration and proportions of an artificial auditory canal; and the correctness of this estimate was demonstrated practically at the operation hazarded upon its presumption. Shortly after the maxillary wound had healed, the operation was performed. Except

when stated to the contrary in the description below, the operation was in detail similar to that last described.

After the patient had been anesthetized, and the dipper-shaped aural speculum (Fig. 4) secured in place by pressure of the finger of one of the physicians assisting—the head remaining in the recumbent posture (Fig. 5)—the tapering reamer (Fig. 6) was guided directly through the middle of the bony septum, which, at a depth of five-eighths of an inch it perforated, entering the space beyond. This space was now cleansed by syringing through the new canal with the fine-stream syringe already described. There escaped much epithelial detritus, blood, and what seemed to be pus, but whose character was not certainly established at the time. The deep space proving, on being probed, ample, laterally, it seemed advisable to enlarge the new canal at once; and this was, therefore, done with the round burr (Fig. 7), six-thirty-seconds of an inch in diameter. As probing then showed that the canal might, with advantage, be still further enlarged, a larger elliptical burr (Fig. 10) was passed to the depth of twenty-thirty-seconds of an inch.[1]

Fig. 10.

The ear was then freely flushed with hydrogen dioxid and the parts afterward dried as well as possible with the absorbent cotton-wool dossils. No drum-head was positively identified, although, from the appearance of the bottom of the space entered, it seemed as if the artificial canal had terminated at the membrana flaccida, or else within the atticus tympanicus—it could not be determined which, owing to the macerated condition of the parts, the hemorrhage, and the purulent discharge which followed the operation. A piece of soft-rubber tubing, seven-thirty-seconds of an inch in diameter, sterilized, was then introduced and secured within the artificial canal, and an antiseptic dressing was then applied.

Five days after the operation, there was, upon tympanic inflation, a perforation-whistle, so called. A drum-head was still indistinguishable.

The hearing improved steadily, until with the affected ear the patient could hear a low voice and loud whisper at a distance of thirteen feet, and a forty-eight-inch watch at two inches. Still later, he could hear with it an ordinary voice at a distance of forty-five feet.

The lumen of the artificial canal, as is usual in such cases, soon began to contract, when a platinum tube, specially prepared, was inserted and worn in the canal without discomfort.[1]

Antiseptic treatment was maintained until the improvement in the otorrhea made it allowable for the patient to return to his home and the care of his family physician. There, no effort was made to retain the platinum tube within the canal; for upon revisiting me in the following month, the patient affirmed that the physician had not replaced the tube since the date of his return home. In consequence, the lumen of the canal had greatly contracted, the mechanical advantages gained by the operation had been to a great extent lost, and there was still a slight otorrhea. Altogether the result was unsatisfactory, notwithstanding the fact that the hearing had remained at its best.

When last seen the patient was wearing in the contracted canal compressed loops of fine silver wire.

Although the advantages of a finishing operation were urged upon him, he would not consent to further surgical interference—a fact much to be regretted, inasmuch as there is reason to believe that a complete cure might thereby have been effected.

At last report, the hearing had remained good.

3211 Lucas Avenue.

[1] The long diameter of this burr, continuous with the long axis of the tool-shaft, was twelve-thirty-seconds of an inch; the transverse, short diameter, eight-thirty-seconds of an inch. The flutes, or grooves, were cut deeply, sharply, and spirally, at an angle with the meridian of the burr, so to speak; and the tool highly tempered—altogether a most effective instrument for perforating bone.

THE ETIOLOGY OF CHOREA.

By B. K. RACHFORD, M.D.,
of Newport, Ky.,
Clinician to Children's Clinic, Medical College of Ohio, Cincinnati, Ohio.

At the last meeting of the American Pediatric Society (Boston, May, 1892), I read a paper[2] on the "Anemia of Tuberculosis," wherein, from an inquiry into the blood-state of 218 convent girls, I demonstrated that tuberculosis of the blood-forming organs, and especially of the lymphatic tissues, is one of the most frequent causes of anemia. I further demonstrated that this lymphatic tuberculosis (scrofula[3]), although producing the most profound anemia, was very frequently concealed—that is, confined to the deep-seated or hidden lymphatic tissues of the abdomen and chest. I further insisted that this concealed form of tuberculosis was very common, and might readily be overlooked, if the superficial lymphatics gave no suggestion of the deep-seated lymphatic disease; and moreover, that the severity of the disease might readily be underestimated, even when the external lymphatics were involved, if one judged of the severity of the deep-seated process by the superficial glandular enlargement.

I also expressed the belief in this same paper that concealed scrofula was one of the most frequent causes

[1] This tube was made for the case by Henry M. Baird, D.D.S., of St. Louis, of whose skill therein I desire to make this public and grateful acknowledgment.

[2] Archives of Pediatrics. December, 1892.

[3] By scrofula is meant tuberculous disease of the lymphatic glands or the marrow of bones.

of those obscure and troublesome anemias that we are constantly called upon to treat. So important a cause of anemia did I find tuberculous disease of blood-glands to be, that I offered the following as a rule of practice, founded on the strongest of circumstantial evidence, that "well-marked anemia, without apparent cause, is strongly suggestive of concealed tuberculosis," and when to this is added a family history of tuberculosis and exposure to the contagion, I believed one was justified in making the diagnosis of scrofulous anemia. For further particulars concerning the relationship of scrofula to anemia I must refer the reader to my paper quoted, and ask him only to bear in mind, as he reads the following inquiry into the etiology of chorea, that scrofula, either external or concealed, is one of the most frequent causes of anemia.

It has been a common observation for many years that the most frequent pathologic condition associated with chorea is anemia. There are few facts more securely fixed in the medical mind than this, and it therefore does not require discussion.

Associating these two facts, it occurred to me that the anemia of chorea might in some instances be tuberculous in origin, and if so, might not this throw some light on the etiology and treatment of this obscure disease? The following investigation was therefore begun for the purpose of studying the causative influence of scrofulous anemia in the production of chorea.

Just at the time I began this inquiry the following case came to me in private practice. I recite it here, as it well serves the purpose of introducing my subject:

CASE I.—A girl, ten years of age, with a family history of tuberculosis on the mother's side. It is near the close of the school year, and she has been working hard. She has one sister younger than herself; both are slender, pale, and of a nervous temperament, and both have enlarged cervical lymphatics. The child never had rheumatism, and has no heart-murmur; she has a blepharitis marginalis and chronic coryza. Blood-examination shows 65 per cent. of the normal amount of hemoglobin, and 3,000,000 red corpuscles to the cubic millimeter. In short, she is a typical case of scrofulous simple anemia.

When she came under my observation she had had chorea for more than two months, and during all this time she had taken Fowler's solution without benefit. I continued this drug in large doses for two weeks, but getting no benefit from it, I concluded to treat the anemia, and let the chorea take care of itself. I prescribed fresh air, good food, and six grains of the saccharated carbonate of iron three times a day. Under this treatment the chorea rapidly improved. After two weeks the syrup of the iodid of iron was substituted for the carbonate, and this was continued for two weeks. During this time she rapidly gained in health and strength, and the choreic movements disappeared. The last blood-examination showed 90 per cent. of hemoglobin, and 4,500,000 red corpuscles to the cubic millimeter.

After one month of treatment she was entirely well, and has remained so ever since.

In the study of this case I recalled to memory the cases of chorea I had seen in private and dispensary practice, and was impressed with the belief that this case was a type of one of the most ordinary forms of chorea, and that in such cases as this the results of treatment indicated that the chorea was due to the scrofulous anemia. This belief led me to a more careful investigation of the subject, the results of which I here offer as a contribution to the study of the etiology of chorea. I wish especially to call attention to the table presented, and the deductions that are drawn from it, but before doing this I shall ask indulgence for reciting two or more cases of scrofulous chorea that have recently come under my observation:

CASE II.—M. Y., aged thirteen, with a negative family history, came to the clinic July 1, 1892, to be treated for an attack of chorea, from which she had suffered four weeks. She had continued to work in a tailor-shop till she could no longer hold anything in her hand. There had been frequent epistaxis; she had never had rheumatism, and there was no heart-bruit. The most marked symptom, apart from the chorea, was the profound anemia. Blood-examination showed 60 per cent. of hemoglobin, and 3,200,000 red corpuscles to the cubic millimeter. There was general lymphatic enlargement.

Treatment consisted in liquor potassii arsenitis, 5 drops three times a day, to be increased one drop a day for five days, then diminished one drop a day for five days.

After thirteen days of treatment, July 13th, the child was no better; I continued Fowler's solution, 5 drops, three times a day, and ordered syrupus ferri iodidi, 15 drops, three times a day. On July 18th the choreic movements were better, and I continued the iron, but discontinued the Fowler's solution. On July 25th she was improving slowly and the treatment was continued. On August 15th she was quite well.

I feel quite sure that in the treatment of this case the iron was a much more efficacious remedy than the arsenic.

CASE III.—L. R., thirteen years old, had a negative family history. Chorea had existed for two months, when, on August 19, 1892, she applied at the clinic for treatment; she had never had rheumatism, had no heart-bruit, was very anemic, and the cervical lymphatics were enlarged. Treatment consisted of syrupus ferri iodidi, gtt. 15, three times a day. On September 2d she was rapidly improving, and on September 12th she was discharged well.

Such cases as I have here reported are by no means rare. In truth, I am of the opinion that more than one-half the chorea-cases in dispensary

practice conform more or less closely to this scrofulous type, while only about 25 per cent. belong to the rheumatic type of the disease.

The following table contains all the cases of chorea of which I have any record. These cases are taken chiefly from the Children's Clinic of the Medical College of Ohio, and I am indebted to Dr. Frank Southgate for assistance in searching these records. The family histories in such records as this are necessarily incomplete, and "negative," or "good," is sometimes written when a family history of tuberculosis exists. The long-continued association in the medical mind of chorea and rheumatism makes it altogether probable that these histories record every semblance of rheumatism that the patient may have had. And the fact that scrofula and chorea have never been associated in the medical mind, as cause and effect, makes it also very probable that these histories do not record nearly all the cases of tuberculosis. This opinion is supported by the fact that in the recent cases of chorea that have come under our observation at the clinic we have found a much larger percentage of tuberculous cases than are found in the old records, which were made before tuberculosis was looked upon by us as a possible etiologic factor of chorea. For these reasons one may at least feel assured that the importance of tuberculous anemia as an etiologic factor in the production of chorea is at least not exaggerated in the table.

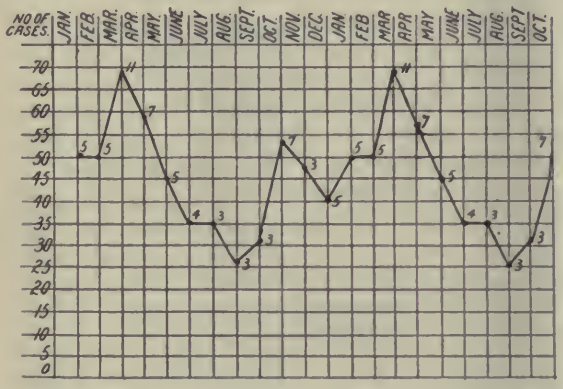
In the following table there are 61 cases of chorea. One of these cases gave a history of syphilis; 3 gave histories of scarlet-fever shortly before attack; 20 had heart-murmurs, but at least 7 of these were anemic murmurs; and of the 13 remaining cases, 5 gave no evidence of rheumatism; 14 gave histories of rheumatism, and in all but 4 of these cases there was a heart-bruit; 29 gave histories of tuberculosis; 16 gave negative family histories; 33 are recorded as anemic, and these 33 cases include all of the 29 tuberculous cases. In all the recent cases the diagnosis of anemia was made by a blood-examination.

These figures speak for themselves and clearly show that scrofulous anemia is a very important, if not the most important, etiologic factor in the production of chorea. Of the 61 cases of chorea, 29, or 48.2 per cent., have tuberculous anemia. Besides this, it is more than probable that some of the cases marked "negative" were really tuberculous, —that is to say, had concealed scrofula, a form of tuberculous disease which I have elsewhere shown to be of very frequent occurrence. We conclude, therefore, from a study of the facts of the table, that fully 50 per cent. of the cases of chorea occurring in dispensary practice have tuberculous anemia. That this tuberculous anemia is an important etiologic factor in producing the chorea is evidenced by the fact that when the anemia is treated with cod-liver oil and iron, the choreic movements disappear.

Name, or No. of history.	Sex.	Age.	Family history	Personal history.	Heart-bruit.	Anemia.	Date of beginning of attack.
868	M.	7	Negative	Rheumatism	Yes	...	March.
1121	M.	9	"	Negative	No	Yes	August.
1204	F.	11	"	"	"	...	July.
1246	F.	10	"	Tuberculosis	"	Yes	April.
1308	F.	6	"	Scarlet fever and nephritis	"	...	Jan.
1318	M.	10	Nervous	Tuberculosis	"	Yes	"
1339	M.	11	"	Epilepsy	"	...	April.
1440	M.	6	"	Scrofula	"	Yes	May.
1865	M.	9	Good	Scarlet fever and nephritis	"	...	June.
1950	F.	13	Rheumatic	Scrofula	"	Yes	March.
2034	F.	7	Negative	"	"	"	May.
2061	F.	7	"	Rheumatism	Yes	...	Oct.
2091	F.	10	"	Negative	...	...	June.
2142	F.	9	Good	Tuberculosis	Yes	Yes	July.
2556	F.	10	Negative	"	...	"	"
2667	F.	6	Nervous and tuberculous	Rheumatic	Yes	...	Oct.
2771	F.	11	Negative	Rheumatism	"	Yes	Nov.
2280	F.	4	"	Tuberculosis	"	"	Jan.
2308	M.	9	"	Negative	No	...	Feb.
2830	M.	7	"	"	"	...	March.
2850	F.	8	"	Tuberculosis	Yes	Yes	"
2863	M.	10	"	Rheumatism	No	...	April.
3174	F.	12	Nervous	Negative	"	...	Oct.
3260	F.	11	Negative	Rheumatism	Yes	...	Dec.
3468	M.	10	.....	"	"	...	May.
3731	M.	10	Nervous	Scrofula	No	Yes	March.
3935	M.	11	Negative	Negative	"	...	April.
4300	M.	13	Tuberculous	Tuberculosis and scrofula	"	Yes	"
4525	F.	10	Good	Scrofula and rheumatism	"	"	March.
3165	M.	11	Negative	Scrofula	"	"	Nov.
3213	F.	10	Good	Fright	"	...	Dec.
3331	F.	10	Negative	Negative	Yes	Yes	Feb.
36	M.	15	"	"	No	...	April.
55	M.	11	Rheumatism	"	Yes	...	Oct.
57	F.	11	Nervous and tuberculous	Scrofula	No	Yes	"
84	F.	8	Negative	"	"	"	Nov.
98	F.	8	"	"	"	"	Dec.
103	F.	11	"	Rheumatism	Yes	...	"
135	M.	8	Tuberculous	Tuberculosis	...	Yes	"
151	F.	12	Nervous	Negative	No	...	Jan.
190	F.	10	Negative	Scarlet fever	"	...	Feb.
252	F.	11	Syphilitic	Negative	"	...	March.
255	F.	9	Nervous	Scrofula	"	Yes	"
261	F.	8	Negative	Negative	"	...	"
319	M.	11	"	Rheumatism	Yes	...	April.
335	M.	8	Nervous	Scrofulous	No	Yes	May.
341	F.	12	"	Negative	Yes	...	"
365	M.	12	"	Scrofula	"	Yes	June.
572	M.	13	Tuberculous	Tuberculosis	No	"	Sept.
592	F.	10	Negative	Scrofula	Yes	"	"
599	F.	10	"	Negative	No	...	"
622	F.	10	"	Rheumatism	"	...	Oct.
629	F.	10	Nervous	Tuberculosis	"	Yes	"
777	M.	8	Negative	Rheumatism	Yes	"	Jan.
810	F.	9	"	Negative	No	...	Feb.
A. B.	F.	10	Tuberculous	Scrofula	"	Yes	March.
M. Y.	F.	13	Negative	"	"	"	June.
L. R.	F.	13	"	"	"	"	August.
H.H.	F.	10	Tuberculous	Scrofula and rheumatism	Yes	"	March.
C. L.	F.	13	"	Scrofula and rheumatism	No	"	Feb.
R. S.	M.	9	Rheumatic	Scrofula	Yes	"	August.

The appended chart strikingly demonstrates the seasonal relationship between chorea and tuber-

culosis. The tuberculosis line is constructed from 407 cases of tuberculosis taken from the Children's Clinic of the Medical College of Ohio. The date of first visit is the date used. The numbers placed along this line denote the number of cases of chorea that have occurred in each month of the year. These chorea cases are taken from the same records and cover the same period of time.



I have, in a paper soon to be published,[1] discussed at length the relationship of chronic anemia to the neuroses of childhood, and have cited the experiments of V. Aducco,[2] to prove that chronic anemia produces an excitability of the nerve-centers. He produced anemia of the nerve-centers by cutting off a portion of the blood-supply, by the partial or complete closure of bloodvessels leading to these centers. He compared the excitability of the nerve-centers before and after the artificial anemia, and in this way determined "the effect that partial anemia exercised on the nerve-centers." Dr. Aducco concludes his paper as follows:

"In conclusion, I must say that the researches I have just described have led me to draw the following conclusions: In anemia, that is to say, when the flow of the blood is diminished, the active substance of the nerve-centers is found in a state of great excitability. In this condition excitants from the exterior act much more energetically than in the normal condition. This state of excitability *increases* most probably during the entire duration of the anemia. It seems to me, also, that one ought to be able within certain limits to admit that there is an inverse relationship between nutrition and excitability of the nerve-elements; this latter augments all the time the nutrition diminishes."

From the statistical, clinical, and experimental evidence given in this paper, I think one is justified in the conclusion that tuberculous anemia plays a most important rôle in the production of chorea.

It is not the purpose of this paper to underrate the etiologic importance of rheumatism in producing chorea, for there is no fact better established in medicine than that about 25 per cent. of all cases of chorea are preceded by an attack of rheumatism. In the table presented 23 per cent. of the cases had rheumatism and 21 per cent. had organic heart-disease, and these figures are in close keeping with the figures established by a great many observers, but they only show what has been known for a long time, that rheumatism and organic heart-disease are important etiologic factors of chorea. But what I do wish to protest against is the apparently prevailing idea that rheumatism is the only cause of chorea worth searching for. Investigators, in their zeal to find in all cases of chorea a previous history of rheumatism, have overlooked other important causes, and have taken as evidence of rheumatism the most vague history of muscular pains in the past.

I hope, therefore, that the foregoing table will serve to call attention to the relationship of tuberculosis and other chronic anemia-producers to chorea. For it is my belief that rheumatism, tuberculosis, malaria, syphilis, scarlet fever, and possibly other zymotic diseases, produce chorea by acting on the nerve-centers through the blood, and that they may do this in two ways: first, directly by chemical poisons produced during the intercellular contest of cells and bacteria which occurs in all zymotic diseases; second, indirectly by malnutrition of the nerve-elements due to the impoverished state of the blood or feeble capillary circulation in these diseases.

In conclusion I offer the following rather ambitious attempt at an explanation of the relationship of the various etiologic factors in producing chorea.

First, and probably the most important of all the factors that produce chorea, are the influences that are classed as predisposing causes. These predisposing causes produce a hypersensitiveness in the ganglion cells and other nerve-elements of the central nervous system, and this sensitive, unstable condition of the nerve-elements is the great foundation-cause of chorea. Among the predisposing causes that act by developing or increasing this sensitive condition of the nerve-elements are the following:

First. *Heredity.* A neurotic family history is usually found.

Second. *Sex.* Females have more highly organized and sensitive nervous systems than males.

Third. *Age.* Chorea is more frequent during childhood because "the ganglion cells and other nerve-elements during this period of rapid metabolism are immature and unstable." (Dr. Couston.) And it is less frequent as the mechanism-inhibiting reflex phenomena become better and better developed.

Fourth. *Social condition,* when it results in impure

[1] Archives of Pediatrics, May, 1893.

[2] Transactions of the Tenth International Medical Congress, vol. ii, part 2, page 70.

air, poor food, and great nervous strain, may lower the tone of the nervous system.

The foregoing predisposing causes, which, for the most part, are beyond our control, are the chief factors in producing that instability of nerve-elements that makes it possible for chorea and other so-called neuroses to develop when the direct and exciting causes are favorable to their development.

The second great etiologic factor in the production of chorea is a malnutrition of the nerve-centers as a direct result of poisoned or impoverished blood. The hypersensitive nerve-centers are, as we have seen, readily made more sensitive and irritable by insufficient nourishment. Diseases, therefore, that produce chronic anemia, or any other blood-change that will interfere with the nourishment of the nerve-elements, will act as causes of chorea.

Among the causes that act in this manner are the following:

First. Tuberculosis, especially of the lymph-glands, is, as we have seen, a most important cause; over 50 per cent. of the cases of chorea occurring in dispensary practice have tuberculous anemia.

Second. Rheumatism is a most important and well-established factor, and occurs in 25 per cent. of all cases of chorea.

Third. Organic heart-disease, apart from rheumatism, is also an important factor, and may act by retarding the capillary circulation, and in that way influencing the nutrition of the nerve-centers.

Fourth. Malaria, scarlet fever, and other diseases that produce profound anemia, may act in the same way.

In attempting an explanation of the etiology of chorea I have, in the foregoing scheme, given first rank as an etiologic factor to the blood-state that results from certain zymotic diseases. This blood-state is, in my opinion, the real cause of the disease, and, what is more important to us as clinicians, is a cause that may readily be removed by treatment.

Last, and least of all in importance in producing chorea, are the so-called exciting causes that act only in precipitating the attack in children that have been prepared for this disease by heredity and malnutrition. Among the exciting causes are fright, grief, mental overwork, ocular defects, and genital irritation.

I am not presumptuous enough to believe that I have in this paper set forth the exact relationship of tuberculous anemia, rheumatism, etc., to chorea; but I have been induced rather to offer this explanation in the hope that we may all be benefited by the criticisms it provokes.

Sir Andrew Clark has been reëlected President of the Royal College of Physicians of London for his sixth term.

SYPHILIS, EPITHELIOMA, LUPUS VULGARIS, AND LUPUS ERYTHEMATOSUS.

Notes from Ten Years' Service (4131 cases) at the Philadelphia Dispensary for Skin Diseases.

By HENRY W. STELWAGON, M.D.,
CLINICAL PROFESSOR OF DERMATOLOGY IN THE JEFFERSON MEDICAL COLLEGE; DERMATOLOGIST TO THE PHILADELPHIA HOSPITAL, ETC.

SYPHILIS.

The cases of cutaneous syphilis numbered 280; of these 129 were in males and 151 in females. In this number are included 15 cases of hereditary infantile syphilis. Of the 265 cases of acquired syphilis, there were 132 representing the early or secondary eruptions, and 133 representing the late or localized disease. In these cases there were—

Between 15–20 years	23 cases.
" 20–30 "	98 "
" 30–40 "	79 "
" 40–50 "	48 "
Over 50 years	13 "
Age not recorded	4 "

Of the types of the early eruptions, 24 cases were macular, of which several were maculo-papular; 97 papular, of which 12 were papulo-squamous, 11 chiefly moist-papular, 4 miliary-papular, and 4 annular (all four in colored persons), 2 papulo-pustular, 10 pustular, of which 1 was miliary-pustular, 2 large-flat-pustular, and 2 decidedly rupial; and 1 generalized tubercular. In these early cases also are included 8 patients with chancre, in whom the eruption developed after they came under observation. Of these 8 cases of chancre, 3 were extra-genital—1 on the lip, 1 on the chin, and 1 on the cheek.

The length of time between exposure and the appearance of the early cutaneous outbreaks, so far as can be approximately stated, varied from seven weeks to a year. In two or three cases the disease was of the malignant variety, and these were among the pustular cases, but in no instance was a fatal ending recorded. In the great majority of the cases the disease was mild and rapidly responsive to treatment. Although the various vaunted remedies brought out from time to time were experimentally prescribed, such trials merely resulted in emphasizing the value of mercury as the specific remedy. Along with this drug were prescribed, according to indications, small doses of opium, ferruginous tonics, cod-liver oil, and other nutritives. The mercurial commonly prescribed was the protiodid or the gray powder.

Of the late syphilodermata the types were: In 54 cases tubercular non-ulcerating; in 51, tubercular ulcerating; in 8, gummatous; in 1, vegetating; in 19, ulcers having resulted probably from the tubercular or gummatous type, but whose early features had been lost. The site of the eruption in

these late cases were: Face, 43 cases; legs, 30 cases; arms, 16 cases; hands, 9 cases; trunk, 7 cases; scalp, 4 cases; neck, 3 cases; arms and legs, 2 cases; feet, 1 case; palms and soles, 1 case; two or more regions, 17 cases; and not recorded, 8 cases. In most of these cases the eruption appeared several or more years after the contraction of the disease, and, in so far as could be ascertained, more especially in those in whom early treatment had been neglected or had been of short duration.

In a number of patients ten years had elapsed since the chancre, and in one case twenty years. In most of the cases of the tubercular type, especially the non-ulcerating, the eruption was sluggish, the disease pursuing a slow and long continued course; in one instance the duration had been ten years. In most of the cases, too, there were no other discoverable symptoms, either in the present or immediate past. Excepting a few cases of the superficial tuberculo-pustular type, and commonly about the nose, the disease yielded rapidly to treatment. Locally, a weak mercury oleate ointment, or white precipitate or citrine oinment, was employed, and in obstinate and rebellious cases, a weakened mercurial plaster. In these cases the ordinary constitutional methods by potassium iodid and a mercurial, usually the biniodid or corrosive chlorid in small doses, were prescribed. In some cases a combination of the iodids—ammonium, potassium, and sodium—was found to be more efficient and better borne. The dose of the iodid in the average case scarcely exceeded ten grains three times daily, and in many cases five-grain doses were sufficient to bring about recovery. The mercurial was always prescribed, as the experience of this Dispensary has always been that the late syphilodermata so treated exhibited less tendency to recur than if potassium iodid alone had been given. In exceptional cases cod-liver oil and iron preparations were necessary before satisfactory response was made to the specific treatment.

EPITHELIOMA.

In all, 27 cases came under treatment, 10 males and 17 females. Excepting one case, all were of the superficial type. Of these patients, only 7 were under the age of fifty; between fifty and sixty there were 7 cases, and over sixty there were 13 cases. The youngest patient was aged thirty-five, and presented a small lesion of six months' duration over the left eyelid. The duration was noted in only 11 cases, and in these it varied from six months to ten years. As to the site of the disease, in 12 cases it was the nose, either upon the ala, side, or bridge; in 4, under the right eyelid; in 1, under the left eyelid; in 3, on the cheek; in 2, close to the ear; in 1, on the ear; in 2, on the forehead; in 1, on the left side of the vulva; and in 1, on the back of the hand.

The treatment selected depended upon the size and location of the lesion, and to some extent upon the patient's inclinations. It consisted in the use of a plaster of resorcin or pyrogallic acid, two drams to the ounce, applied continuously for from one to several weeks; in the use of an arsenical paste made up of one part of arsenious acid to two or more parts of acacia, and sufficient water; in excision; in curetting, followed by cauterization with caustic potash, or a few days' use of the pyrogallic acid plaster. The surest results as regards permanence may, upon the whole, be said to have followed the methods of treatment by arsenical paste, and by excision.

LUPUS VULGARIS.

Tuberculous infection of the integument was seen in 16 instances, in 6 males and 10 females. Of these cases, 11 represented the clinical type usually designated lupus; 3 cases, the clinical type commonly known as scrofuloderma, the disease having had its beginning in a breaking down of one or several of the lymphatic glands; and in 2 cases the so-called small papulo-pustular scrofuloderm described by Duhring some years ago was presented. Three of the patients were of foreign birth. In 6 of the lupus cases the disease had appeared before the tenth year, and in 1, as early as the second year of life; in only 3 instances did the disease appear after the age of twenty-five. The previous duration varied, in the 16 cases, from six months (scrofuloderma) to ten or more years. The disease was, as a rule, slight in extent, and in all instances, except 4, limited to the face or contiguous part; even in the 2 cases of superficial scrofulous ulceration beginning in the cervical glands, the disease had encroached slightly on to the face. One case especially deserving of note here involved the tip, right ala, and side of the nose, appearing as a mushroom-like ulceration.[1] The most extensive case was in a boy of fifteen, the disease, of years' duration, presenting several large areas on the face, leg, and arm, spreading peripherally like a syphilide.

The treatment consisted variously of the continuous application of pyrogallic acid plaster, of from 20 to 25 per cent. strength; arsenical paste; curetting, supplemented either with a momentary cauterization with caustic potash, or several days' use of pyrogallic acid plaster; and excision. In these cases, as in all lupus cases, the disease exhibited a strong disposition to recurrence. The constitutional treatment, was based on indications; in many cases it was not prescribed at all, while in a number

[1] This case is reported in full in the Journal of Cutaneous and Genito-urinary Diseases for November, 1892.

cod-liver oil was advised, with, in a few instances, decided benefit.

LUPUS ERYTHEMATOSUS.

This disease was not common, although more so than lupus vulgaris. Nineteen cases, or a proportion of less than one-half of 1 per cent., were observed; females largely predominated, this sex being represented by 15 cases. Eight of the 19 cases were of foreign birth, 5 of Irish, 2 of Scotch, and 1 of German. With the exception of a few cases, which presented a diseased area covering the nose and extending partly over the cheeks, the eruption was slight in extent and of a mild superficial type, consisting of two or three dime to quarter-dollar-sized patches. The previous duration varied from a few months to four years. The youngest patient was a woman aged twenty-one, and from this age up to thirty the largest number, 9 cases, were met with; the oldest patient was aged sixty-six. The nose was the site of the disease in 5 cases; the cheek, in 5 cases; the nose and cheeks, in 3 cases; in the remaining cases there were two or more small scattered patches over different parts of face. The eruption was not seen outside of the face-limit, except in one case, which, in addition to a patch upon the chin, presented a patch upon the scalp also. Nothing was learned as to etiology.

The main treatment was external, although in a few cases advantage seemed derived from the administration of cod-liver oil, and from phosphorus. The most valuable external applications were: A lotion of a dram each of zinc sulfate and potassium sulfid to four ounces of water; sulfur ointments; tarry ointments and oils; salicylic acid ointments; ichthyol ointments and lotions, of from 5 to 50 per cent. strength; resorcin lotions, of from five to sixty grains to the ounce; pure carbolic acid; and painting with a collodion solution of pyrogallic acid, of from ten to sixty grains to the ounce; and finally, in suitable cases, linear scarification, and the curette.

THE PROPHYLAXIS OF SCARLET FEVER.

By E. P. HERSHEY, M.D.,
of Denver, Colorado.

It has become a recognized fact that little or nothing can be done in the way of medical treatment that will either abort or mitigate the severity of scarlet fever. All that the physician is able to do, as in the other exanthemata, is to control symptoms. There is no question, at this date, as to the importance of antiseptically treating the throat even in the lightest cases, and that this is the only thing in our power to prevent serious invasion of the disease. As the sequelæ are always in proportion to the severity of the attack, we are prompted to control to the best of our ability all febrile symptoms of a severe type.

The one dangerous after-effect of scarlet fever—nephritis—leads us to administer throughout the whole affection such remedies, principally digitalis, as may have a diuretic effect. The danger of heart-complication can also be guarded against by the timely and continued use of ammonium carbonate. These two remedies are admitted to be the safest and most valuable in the treatment of this disease, as far as systemic effects are concerned, but these are necessary only in proportion to the amount of absorption that takes place through the glands of the throat, from the putrid matter that forms about them. Observation upon this point has brought to light the fact that whenever the throat-symptoms have been of particular severity, the case has always been a grave one; and it may be said that if there has been error in the treatment of scarlet fever, it may usually be found in laxity of attention in keeping the throat clean. Cases do much better on the half-hour application than they do by following the usual direction, to "clean the throat every two or three hours." But, with all this, we lose a certain per cent. of our cases in proportion to the severity of the epidemic.

The disease being preëminently a contagious one, it is to this point that our efforts should be concentrated as a sure means of controlling the disease. Scarlet fever could be effectually stamped out were we able to destroy the contagion. That, in a very small proportion of cases, this is done, there is no doubt. It is a well-known fact that the products of desquamation are decidedly contagious for a long period after all symptoms of the disease have disappeared. It may be truly said that one susceptible to the disease may take it from one who has recovered at as late a period as ninety days after desquamation first set in.

During the past three years, in an effort to ascertain the origin of contagion in the cases that have come under my notice, it was learned that at least 70 per cent. of all cases were either supposed due or were directly traced to contact with other children at school. As to the remaining 30 per cent., the source was either unknown, or else was ascribed to direct exposure. It seems as though all possible care is taken in every case of this affection to prevent contagion during an attack, and that after the patient has been pronounced well the Board of Health thoroughly fumigates the house in which the case existed. It is true, too, that all physicians, recognizing the contagiousness of the desquamation, use the best means in their power to keep the body disinfected—the most prevalent remedy for this purpose being carbolated vaselin, which has proved itself an insufficient means to combat the infection.

For a considerable time, knowing the antiseptic value of hydro-naphthol—which is equivalent to that of one-fifth of the same quantity of corrosive sublimate, and the latter remedy, if used for any length of time, having a tendency to produce ptyalism, a 5 per cent. hydro-naphthol soap suggested itself. Daily washing with this has, without doubt, given the following two results, viz.: desquamation has been hastened, and contagion prevented. Until assurance had been established as to the efficacy of this after-treatment, a certain amount of care was taken to prevent other members of the family from coming into contact with the convalescent. A number of cases since then have been permitted to mingle with other children during desquamation, as long as the soap was used, and a single case has yet to be noted in which such exposure has led to the development of the disease.

The use of such an antiseptic soap insures, first, the absolute contact of the medicament, on account of the rubbing; second, the washing away, and at the same time the disinfection of the loose particles; third, that the surface is left clean.

In the early days of desquamation two or three washings daily should be required. After a period of one week daily washings suffice. This should be continued for ten days longer, at which time all signs of desquamation have disappeared, if this treatment has been adhered to.

Were this method of the after-treatment of scarlet fever to be carried out by others, and found in their hands to be as successful as this report shows, then we shall have gained a great deal in the prevention of the spread of that affection, which gives a greater mortality among children than any other disease. It is with this in view that I recommend its use by others, that any failure in its efficacy may be reported.

CLINICAL MEMORANDA.

A CASE OF MOVABLE OR FLOATING LIVER.

BY GEORGE NOBLE KREIDER, A.B., M.D.,
SURGEON TO ST. JOHN'S HOSPITAL, SPRINGFIELD, ILL.

PROFESSOR STRÜMPELL, in his admirable text-book on the *Practice of Medicine*, in speaking of wandering or movable liver, says: "It is of very rare occurrence, and has been seen thus far only in women." The usual cause of this lesion, and the reason for its appearance in the female, is the tight lacing to which the weaker sex subjects itself. An instance of this abnormality in a man, which I am about to describe, is probably the first to be put on record, and will therefore be of some interest to the profession.

Captain H. B., of Havana, Ill., a veteran of the war of the Rebellion, was brought to my office by his family physician, Dr. P. L. Dieffenbacher, March 17, 1893. An examination was undertaken, and a diagnosis of floating liver was made. On account of the great rarity of the lesion, and to be more certain of its presence, I requested his return in two weeks, when in the presence of Drs. Ryan and Matheny, of Springfield, I made a more thorough examination. The previous diagnosis was confirmed by these gentlemen. The patient was sixty-two years of age, five feet eight inches high, and weighed 180 pounds. His father had died at sixty-eight, from gout, and his mother at forty-eight, from cholera. He had formerly drunk to excess, periodically, but for the preceding eighteen years he had not tasted intoxicants. He had had gonorrhea, and herpes or soft chancre, or both, a number of times, and his attending physician stated that he had had specific disease, of which, however, there was no evidence at the time. The man thought that his liver was loosened by violent muscular exercise some years before, when he had been obliged to lift heavy casks of liquor. He had first noticed a lump in his right side about a year previously, but had paid no attention to it, because he had thought it "natural," and it gave him no pain. When it got larger he became alarmed, and consulted Dr. Dieffenbacher. He had never had any headache or dizziness, no cough, pain in the chest, palpitation of the heart, or shortness of breath. He had never had pains in the abdomen, or nausea, or vomiting. His appetite was excellent, his bowels regular. There was no weakness or pain in the extremities. He slept well, and did not rise at night to urinate. His urine was normal, his pulse 72, his temperature 98.8°. He was fleshy and well-nourished, and appeared several years younger than he really was. The skin was clear. In fine, the man declared himself absolutely well, as far as he knew.

The patient was slightly bald, and somewhat deaf, but not more so than is usual at his age. There were no scars on his head. Vision was excellent, and there were no scars on the cornea, and no adhesions of the iris. The teeth were well preserved, the tongue was not coated. The naso-pharynx was in a healthy condition, and free from scars. The heart, lungs, and pleura were normal. There were no enlarged veins on the abdomen. The spleen was normal, and the left side of the abdomen was flaccid. In the erect posture a large tumor was evident on the right side, which became much more distinct in the reclining position. The upper and anterior surfaces of the tumor were apparently spherical and smooth; the lower edge could be plainly felt, and a notch corresponding to the separation between the right and left lobes could be easily made out. On percussion, the hepatic percussion-dulness began four and three-quarters inches below the right nipple in the nipple line, and extended downward toward the ilium seven inches. It also extended from the umbilicus eleven inches to the right. The tumor (liver) moved slightly when the man turned. It could be moved about without the least pain, and by lowering the head and elevating the hips, it could be pushed toward its normal place, but it could not be replaced entirely, even after some minutes had been spent in the effort.

The patient declared that he suffered absolutely no inconvenience from his floating organ, and when he was satisfied that it was not malignant, he seemed perfectly happy.

Strümpell says that there are usually some discom-

fort, pain, and digestive disturbances. I recommended the application of a retentive bandage.

The points of interest in the case are: The derangement is not congenital; it occurs in a man; it was apparently caused by muscular effort; it was not caused, and is not accompanied by any disease of the lungs, pleura, heart, pericardium, peritoneum, mesentery, kidneys, or stomach. The relaxation of the suspensory ligament has caused a partial revolution of the organ, so that the diaphragmatic surface of the organ is turned toward the anterior abdominal wall. This fact explains the large vertical measurement of the organ as it lies. Finally, the most remarkable fact is that which I have mentioned several times—that he suffers no inconvenience from his wandering organ.

PRENATAL CLOSURE OF THE PULMONARY ARTERY.

By A. J. BURGESS, M.D.,
of Milwaukee, Wis.

After a normal labor at term, a male child was born. The child was of good size, and presented no external abnormality. The child's face made the contortions of one crying, but no sound was uttered. A full hour was spent in trying to restore the child. After the lungs had been inflated several times by artificial means, the heart beat vigorously, but upon ceasing the inflation the heart-beat gradually became slower and weaker. After each inflation during an hour, the heart-beat underwent the same modification, and efforts on the part of the child at crying and breathing were made with only one result, viz., the drawing inward of the lower border of the chest by the action of the diaphragm. Powerful inflations did not seem to expand the chest. The hand felt a churning sensation over the lower chest in front during systole. The child was considered non-viable, and soon died after inflation ceased.

At the autopsy, the costal pleura was found to be adherent to an underlying membrane, about as firmly as two pieces of wet newspaper adhere. The underlying membrane proved to be the pericardium, of which the cavity was largely distended, filling the whole chest. The lungs were not visible from the front. The entire contents of the chest were removed *en masse*. The lungs lay collapsed behind a fluctuating mass that proved to be the heart, the right side of which was enormously distended with blood. The right auricle and ventricle held blood estimated to be at least three ounces.

The right auricle and ventricle were both dilated, and the walls of both excentrically hypertrophied. The right auriculo-ventricular opening was dilated largely enough to admit the tips of the index and middle fingers. The tricuspid valve formed a fringe around this opening, and was covered with a papillary growth. The valve was entirely incompetent. There was absolutely no opening from the right ventricle into the pulmonary artery. The occlusion was musculo-membranous. The segments of the pulmonary valves had apparently become adherent to one another and overlaid, on the ventricular side, by a muscular band. From above, the pulmonary artery was open to the valvular surface, and was probably somewhat contracted in caliber. The papillary fringe on the right auriculo-ventricular valves may or may not have been the remains of a morbid process which closed the pulmonary orifice.

The foramen ovale admitted a large forefinger easily. The left auricle was dilated, but not largely so, and its walls were hypertrophied. The left auriculo-ventricular opening was not far from normal in caliber, and the mitral valve was normal. The left ventricle was dilated and hypertrophied to a moderate extent. The ductus arteriosus Botalli was in the usual situation, but had a caliber larger than usual. The aorta and its valves were normal. There was no defect of the interventricular septum. There was no congenital defect of the interauricular septum, the large foramen ovale being due to the enormous dilatation of the right auricle, and to the fact that it served its own function, plus that of the pulmonary orifice, which had closed. It is probable that the course of events was as follows: At a time late in fetal life, subsequent to the completion of the ventricular and other septa, a morbid process closed the pulmonary orifice of the right ventricle; the right ventricle, its auricular opening, its auricle, the foramen ovale, the left auricle, its ventricular opening, and the left ventricle, became successively dilated; the walls of the several cavities became hypertrophied; and the caliber of the ductus arteriosus became widened.

The reason why this child could not breathe, was that the enormously distended right auricle and ventricle so completely filled the chest—even distending it—that the lungs, collapsed behind the heart, were incapable of inflation by the force at the disposal of the child. The heart was practically a neoplasm distending the chest and compressing its contents.

It seems possible that, had the pulmonary closure taken place earlier, the various compensatory arrangements might have become complete enough to have permitted a longer extra-uterine existence.

In *Pepper's System of Medicine*, vol. iii, page 695, the following statement is made: "If the pulmonary artery is obliterated or exceedingly narrowed at a later period (*i. e.* subsequent to completion of the ventricular septum in the third fetal month), the ventricle shrivels, because no blood is able to pass, and gradually more and more of the fetal current passes through the foramen ovale to the left side." The present case is satisfactory proof that it is not true that the right ventricle always shrivels under the circumstances noted. In this case the pulmonary closure was complete; the ventricular septum was complete; the right ventricle was dilated and hypertrophied. Aside from the condition of the ventricular septum, there is another factor not considered in the quotation made, and that is, the condition of the tricuspid valve and its orifice. In this specimen the tricuspid orifice was dilated, its valve diseased and incompetent, if not entirely functionless. The right auricle and ventricle thus formed practically one cavity, viz., an auricle. The right ventricle functionated in the direction of the right auricle, because no valves opposed it at the tricuspid orifice; and because it *could* functionate it *did not atrophy*.

No. 1102 Grand Ave.

A State Ice-Commission.—A bill is pending in New York providing for a State Ice-Commission, making it a misdemeanor to cut or sell unclean or impure ice. We are a long time reaching such matters!

MEDICAL PROGRESS.

Myxedema following Bronchocele Cured by Thyroid Therapy.—ANDERSON (*The Journal of Laryngology, etc.*, 1893, vii, 2, p. 68) has reported the case of a woman, thirty-two years old, with typical symptoms of myxedema: the skin was dry; the hair was falling out; perspiration was wanting; feet and hands were swollen; there was great languor and want of energy, and then complaint of cold; speech was not affected; the disposition was unaltered; the appetite was poor; constipation was troublesome; memory was impaired; menstruation was regular. During childhood the woman had had a unilateral bronchocele, which disappeared under treatment with tincture of iodin. The mother had had a similar swelling of the throat, but never myxedema. Twenty minims of a specially prepared thyroid juice were injected subcutaneously, at first every third day, then every second day, and then daily. Afterward fried thyroid gland was administered, the injections being continued on alternate days. In all, fifteen injections were made and three glands were eaten in the course of thirty-six days. The patient was at the same time taking a mixture of arsenic and iron three times a day. Improvement set in at once and was marked and progressive.

The Etiology of Emphysematous Phlegmons.—In four cases of cellulitis attended with the formation of gas, FRAENKEL (*Centralbl. f. Bakteriol. u. Parasitenk.*, xiii, 1, p. 13) has succeeded in isolating a hitherto undescribed bacillus, to which he attributes the property of gas-production. The organism is distinct from that of malignant edema and that of "Rauschbrand," but in morphologic appearance is not unlike the bacillus of anthrax. In three of the cases pyogenic cocci were also present. The gas-generating bacillus grew with especial rapidity upon glycerin-agar containing sodium formate, giving rise to an abundant formation of gas having the disagreeable odor of hydrogen sulphid and volatile fatty acids. The organism also gave rise to the formation of gas, but without odor, in agar containing glucose. It grew well in bouillon containing sodium formate or grape-sugar. There was no formation of gas in ordinary gelatin. Spores were not found. The organism could be stained with the ordinary anilin colors, and especially by the methods of Loeffler and Gram-Weigert. Inoculation of guinea-pigs was followed by the occurrence of inflammation with gas-formation. Characteristic bacilli were found in the lesions. One attack failed to protect from subsequent infection.

Glaucoma in Young Persons.—STORY (*Ophthalmic Review*, xii, 137, p. 69) has reported five cases of glaucoma in persons less than thirty-six years of age. The first was in a girl of thirteen, in which the affection developed acutely following the sub-conjunctival injection of two minims of a 3 per cent. solution of cocaine for the purpose of dividing the tendon of the right internal rectus muscle. The attack was relieved by treatment with eserine. Some time later a similar sequence of events followed in the case of the left eye, although the solution of cocaine was instilled, and with it simultaneously two minims of a solution of eserine. The second case was in a woman of eighteen, in which the glaucoma was possibly dependent upon a primary chronic inflammatory process. In the third case, in a woman of thirty-five, glaucoma set in acutely in the left eye, possibly in connection with an intra-ocular tumor. The fourth case was in a man of thirty, in which the process was a chronic inflammatory one, and whose mother had bilateral glaucoma. The fifth case was in a man of thirty-four, in which the lesion was dependent upon a chronic inflammatory process.

Bilateral Polyneuritis following Pneumonia.—KRAFFT-EBING (*Prager medicin. Wochenschr.*, xxiii, 3, p. 26) has reported the case of a farmer, thirty-eight years old, without a history of syphilis or alcoholism, who, following an attack of pneumonia, suddenly lost power in both upper extremities; there was anesthesia down to the elbows, hyperesthesia to the fingers. The paralysis persisted, but the anesthesia disappeared in the course of twelve days. There had also been transitory dyspnea, dysphagia, and impairment of hearing, together with lancinating pains at the nape of the neck, on the back, and in the distribution of the ulnar nerve. There was progressive wasting of the muscles about the shoulder, with degenerative electric reactions and fibrillary muscular contractions. The reflexes and the electric irritability were enfeebled. Subacute anterior poliomyelitis was excluded by the relatively favorable course of the symptoms and by the absence of vasomotor disturbances.

A Vesical Calculus enclosing a Portion of the Bladder-wall.—At a meeting of the Medical Society of Hamburg, SICK (*Deutsche medicin. Wochenschr.*, 1892, No. 51, p. 1171) presented a calculus obtained by supra-pubic section from a man, fifty years old, who for several years had complained of increased frequency of micturition, occasional interruption of the stream and offensive odor of the urine, and who died subsequently in consequence of bilateral pyelonephritis. The calculus was a phosphatic one, and on section presented three layers, the inner and outer of which were in one place connected by a bridge of deposit. The middle layer was made up of organic matter, which upon microscopic examination was found to consist of remains of bloodvessels, connective tissue, and cell-detritus, together with a large number of streptococci. In explanation of the formation, it is suggested that a phosphatic calculus by accretion was made to enclose a fold of the mucous membrane of the bladder, which subsequently became necrotic and was detached.

Protective Substances in the Blood of Convalescents from Diphtheria.—KLEMENSIEWICZ and ESCHERICH (*Centralbl. f. Bakteriologie und Parasitenkunde*, xiii, 5, 6, p. 153) have succeeded in conferring upon animals a relative degree of immunity to diphtheria by means of previous treatment with defibrinated blood or with blood-serum obtained from convalescents from diphtheria. A similar protective influence could not be conferred by means of the blood of healthy persons that had not had diphtheria. As the immunity was not permanent, the opinion is expressed that it was dependent upon the presence of an antitoxin, of which the good effects were exerted until the supply was exhausted.

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THE SANCTITY OF THE CONFIDENCE REPOSED BY PATIENTS IN PHYSICIANS.

AT a recent meeting of the Philadelphia County Medical Society, a most interesting discussion took place upon the medico-legal aspects of criminal abortion. It was pointed out that the mere attempt to commit a criminal abortion constituted the offence (a felony), and that, while the outcome in nowise altered the degree of the crime, it determined the measure of punishment to be meted out to the transgressors.

The most important, and perhaps the most startling, point that was brought out was the dictum, as laid down by the learned and distinguished District Attorney of the City of Philadelphia, and whose position seemed entirely legitimate and logical, that if it come to the knowledge of a physician in his professional capacity, that a criminal abortion has been attempted or committed—*i. e.*, a felony has been committed—it is obligatory upon him to apprise the office of the District Attorney of the facts, with which office then rests the responsibility and the discretion as to what further action shall be taken. In case of death, the facts are to be reported to the office of the Coroner.

It was further maintained that if under the conditions named the physician fail to make report, he renders himself liable to prosecution for misprision of felony. So, too, if a physician be called upon to testify in court in the trial of a case of criminal abortion, he is accorded no immunity in the State of Pennsylvania, and in other States as well, from the necessity of divulging the confidences that have been reposed in him by patients who intrust him with even more than their liberty—that is, their lives. By the mandate of the law he is compelled to answer. True, he may refuse to speak, but he is then exposed to the liability of punishment for contempt of court. The lawyer, for good and obvious reasons, is, under like circumstances, permitted to withhold information confided to him by his client—nay, it would be treachery to divulge such information. The Code of Ethics of the American Medical Association imposes upon the physician this obligation of confidence, but the law does not recognize the Code.

By analogy, too, we can believe that in the trial of a case of murder the physician would be compelled to divulge whatever information he might be possessed of, confided to him though it might be by one who at the same time places his life in the practitioner's hands, while his favored brother, the lawyer, is permitted, also by decree of the law, to withhold, with the utmost sanctity, the information that has been intrusted to him, in a relation in which life may not at all be concerned. The injustice must be self-evident, and the medical profession is justified in demanding (the word is chosen advisedly) the same protection for its members as is accorded their professional brethren, the lawyers.

It is scarcely necessary to say that there is probably no more law-abiding constituent of the community, none that is more self-sacrificing, none that does a greater work of the truest philanthropy and the purest charity than the medical profession. If it be charged that the matter is one of sentiment, we can but reply that the sentiment is the noblest of which man is capable, being even higher than that which permits the lawyer to seal his lips as to the confessions of his client, who comes to him with the knowledge that all the facts must be stated.

Must a stricken human being be compelled to forego medical attention because the law holds over him the threat that the information which he must needs give his medical adviser is to become the possession not alone of him who is called perchance to save life, but of the court and prosecuting attorney as well? Is an unfortunate woman to be permitted

to die because she will not divulge to the medical attendant, who must be called to save life, that which she knows will bring shame not only upon herself, but (what is perhaps more to her) upon her family as well, because that medical attendant is not by the decree of the law permitted to hold sacred the confidence that must be reposed in him? No true man can answer in the negative. No, it is more than a matter of sentiment. It is a matter of justice and of right. To say the least, to the physician it is a matter of equality, and there should be none more ready than the legal fraternity to acknowledge the righteousness of our position, and to extend its hand in support of measures that will accord the physician a privilege, yea, a right, to which he, more than any other, not excepting the clergy, is entitled, and that will place him upon the same plane as the lawyer, with regard to information that comes into his possession from clients who intrust him with their confidence and their person.

We hope that the influential medical organizations of our city and State will take steps to have inscribed upon the statute books such decrees as will confer upon medical men the privilege of holding sacred the confidences that come to them unsought in their professional capacity.

THE CHOLERA.

IN view of the likely recrudescence of cholera with the advent of warm weather, it is well, in advance, to calmly look over the ground, and, profiting by the lessons of the past, and particularly of the recent past, strengthen the weak points in our prophylactic and therapeutic armament. Our familiarity with cholera is, fortunately, a remote one, and the changes that have taken place in the departments of hygiene and therapeutics render unavailable the results of experience gained in previous visitations to this country.

The history of the epidemic at Hamburg during last year has been pretty fully written, but there are some obscure points yet to be cleared up, and certain differences of opinion remain to be harmonized. PROFESSOR HUEPPE,[1] of the University of Prague, and a distinguished hygienist, has made an elaborate and noteworthy contribution to the subject. He points out that both those who maintain that the sole etiologic factor in the development of cholera is the comma-bacillus, and those who attach the greatest importance to local and prevailing conditions, go to extremes in the support of their respective views.

The true position is, as usual, the middle one. To both of the influences named, and to the personal predisposition as well, due importance is to be attached. There is practically no dissent from the proposition that there can be no cholera without comma-bacilli, but it must be equally obvious that the introduction of the bacilli into the human organism does not necessarily give rise to cholera; and that concomitant conditions play some part in the spread of epidemics will not be denied by any fair mind. Granting, then, a due share of importance to all the influences that enter into the etiology of cholera, we have a substantial basis upon which to establish measures of prophylaxis and management.

To prevent the introduction of comma-bacilli into the human organism is to prevent the development of cholera. This is to be accomplished by *isolation* of the sick, and *disinfection* of their excreta and of everything that comes in contact with them. The bodies of those dead of cholera should preferably be incinerated, or they may be wrapped in sheets saturated with a solution of mercuric chlorid, or better, carbolic acid, and be inhumated in the usual manner.

We have intentionally refrained from speaking of quarantine, because we do not feel sure that it is essential; for it has been demonstrated that if, in conjunction with a system of rigid inspection, the other measures mentioned are faithfully carried out, quarantine becomes unnecessary.

The most scrupulous attention must be given to the water-supply, that it be protected from contamination in the first place and that it be subjected to some one of the accepted methods of purification in the second place. To make assurance doubly sure, only boiled water should be drunk and used for domestic and personal purposes, as only cooked food should be eaten.

The local factors, in so far as they are within control, should, by the most scrupulous cleanliness, be rendered such as to render the conditions most unfavorable for the existence and the spread of disease.

The individual predisposition should be reduced to the minimum by careful living, the avoidance of excesses and fatigue, the securing of sufficient rest and sleep, the observance of care in diet, the wear-

[1] Berliner klinische Wochenschrift, 1893, Nos. 4, 5, 6, and 7.

ing of suitable clothing, the avoidance of exposure to noxious emanations and to unfavorable meteorologic conditions—in fact, all of those precautions should be observed that enter into a rigid personal hygiene.

We must realize that we are threatened with an invasion of cholera. While there is occasion for genuine concern, needless alarm is to be avoided. The time is one for calmness and self-control, not for panic and loss of judgment. Cholera is not a contagious disease, according to the accepted use of that qualification. The danger is small if the proper precautionary measures be adopted. The community and the individual will each and both be responsible should cholera become epidemic, for it is within their power—as it is their duty—to prevent such an occurrence.

THE WATER-SUPPLY OF PHILADELPHIA.

Universal suffrage has its drawbacks as well as its advantages. The executive and the judiciary officers of Government may be men beyond reproach, but the legislative branch is sure in time to come to represent the average popular standard of education, intelligence, and morals; and, under existing social conditions that force so large a proportion of the population of large cities into poverty and degradation, and threaten with submersion even those who are above the lowest and the lower depths, that "average standard" cannot be high. The result is that in "City Councils," or "Boards of Aldermen," as well as in State "Legislatures" and "Assemblies," considerations of the common weal often become secondary to those of individual wealth. Every public movement is hampered by the endeavor of individuals to turn it into a source of private gain; and in sanitary matters, which more directly concern The Medical News, these attempts have often resulted in partial or complete perversion, or absolute prevention of important reforms. This has been especially marked in relation to the various projects for improving the water-supply of Philadelphia. In more than one instance, it will be remembered, the courts have had to be invoked to protect the public interests; and despite the full information that has from time to time been gathered by special commissions, sanitary experts, and the heads of city departments, and despite the persevering and intelligent efforts of more than one Mayor—the determination of persons and corporations with "political pull" that the public desire for pure water shall be made to pour a golden stream into their own coffers has hitherto succeeded in preventing the adoption of wisely considered or adequate measures.

In a recent paper (reprinted from the *Proceedings of the Engineers' Club of Philadelphia* (vol. x, No. 1, January, 1893), Dr. Henry Leffmann strongly advocates the erection of a proper plant for storage and filtration of Schuylkill water; believing that for the present, at least, this is of paramount importance. The suggestion is not new, but Dr. Leffmann points out certain advantages not generally recognized, that would follow a mere increase of storage-capacity to, say, thirty days' supply under moderate demands.

1. It would enable pumping to be discontinued at times when the river is in unsatisfactory condition; a much smaller quantity of subsiding-material would be introduced into the basins; and danger from drought would be diminished.

2. Experimental evidence shows that the wholesomeness of water is improved by storage in large reservoirs—partly from subsidence, but largely from changes in the organic life present. Even pathogenetic organisms may be destroyed by such methods.

3. Even should the source of supply be changed hereafter, the reservoirs would be necessary, in order that the city should have adequate supply of water within its borders, to provide against emergency arising from drought, accident, war, or insurrection.

The simplest method of purification is sand-filtration. In the absence of facilities therefor, Dr. Leffmann would prefer pressure-filters, employing coagulants such as alum. "With proper supervision as to the quantity of coagulant used, and with abundant storage-capacity, ... it seems to be possible to furnish the citizens of Philadelphia, at all times, with an abundant amount of perfectly clear water, suitable for all purposes, even when taken from the Schuylkill or Delaware within city limits."

We desire to urge upon the medical societies of Philadelphia, and upon individual physicians, that they make a vigorous, united, determined, and persistent effort to arouse public sentiment to a pitch that shall force City Councils to appropriate the sums necessary to provide the city with abundant storage-capacity, and with

adequate filtration-facilities; and that they insist that this shall take precedence of any question as to source of supply. If our source can be bettered hereafter, well and good; for the present let us make our present source yield us pure water. This can be done, if we persist in sending all selfish schemers to the background; and if we waive, for the present, honest differences of opinion on other points.

EDITORIAL COMMENTS.

The Journal and the Devotees of "Orificial Surgery."—Doubtless our readers, like ourselves, on first seeing this strange term, supposed that it related to a special application of surgical methods to the orifices of the body, and wondered what peculiarities justified such a specialty. One is, however, surprised to learn that it is another of the prolific and inexhaustible brood of nonsensical seriocomic delusions or illusions which seem to spring so naturally from American medical soil. It has a decided mystical and irrational flavor, due, doubtless, to the fact that it is an evident child of homeopathy. One "E. H. Pratt, M.D., LL.D., Prof. of Orif. Surgery" in the Chicago Homeopathic Medical College, a sort of high-priest of the cult, contributes to the organ of the fad a series of articles upon "Orificial Philosophy," in which he summarizes his own work and the philosophy of the Orificialists as follows: "All chronic cases will be found to present some form of orificial irritation sufficient to explain the lowered vitality, etc.; . . . in all forms of chronic diseases, therefore, from functional derangements to the deeper forms of pathology, the lower openings of the body will present abnormal conditions which involve the waste of sympathetic nerve force, and which are, therefore, responsible, etc. . . . Orificial irritation is the predisposing cause of chronic diseases generally."

What fathomless depths either of trickery or dunderheadism does not this *niaiserie* disclose! Every chronic disease of the brain, of the special senses, of the thorax, or of the abdominal cavity due to anal irritation! It is at first disgustingly funny, but, on second thought, it is infinitely serious and frightful to think of the human mind splashing about in such intellectual dish-water. What is sanity, then? one asks. These men are "Profs." and "LL.D.'s"; they publish a bulky monthly journal devoted to this literally *asinine* philosophy, and their medical sect is the "New School," the pet of fashionable folk and the controller of medical legislation. Civilization seems yet a good way off.

Milk-Legislation.—The acme of impudence and cupidity is displayed by the milk-dealers of Philadelphia in their opposition to the Boyer bill, introduced into the House at Harrisburg at the request of the Director of Public Safety of Philadelphia and the Philadelphia Board of Health. Dr. Shakespeare exposes the hypocrisy of the milk-dealers with deserved vigor and denunciation. The dealers say that the passage of the bill would drive them out of business, although milk is still handled in Pittsburg, where the law is operative. They say that the law is a dead letter, because it could not be enforced, which is untrue. They say that the legal standard for the purity of milk is impossible except for Jersey and Guernsey cows. This also is a falsehood. They say, lastly, that the standard for skimmed milk is too high, and Dr. Shakespeare exposes this fourth lie by showing that the milk-dealers are selling "separator-slop," an utterly valueless product of the creameries, for old-fashioned skimmed milk. They naturally wish to continue all this nefarious business, and physicians and good citizens naturally do not wish the people to pay for a fraudulent and diluted article of food at the price of the honest and pure article; while babies are starved by the thousand and disease is invited by the trade, which is really a trade in human life and health. Everyone should use his best endeavor to help on the passage of the Boyer bill.

Water-supply and Typhoid Fever.—From Dr. Leffmann's paper, elsewhere referred to, we extract the following table, showing the great diminution of mortality from typhoid fever in that district of Philadelphia east of Sixth Street and north of Poplar Street, resulting from the abandonment of the Kensington Water-works, and the substitution, in the latter part of 1889, of the Schuylkill for the Delaware as a source of supply of potable water to that district:

	Entire City.	Fifteenth Ward.	Kensington District.
1884	662	25	160
1885	610	19	161
1886	618	19	153
1887	621	20	181
1888	785	31	211
1889	736	42	126
1890	666	45	53
1891	683	52	57

The figures for the entire city and for the Fifteenth Ward, selected because it is a large ward and mostly in good sanitary state, show that the marked decrease in Kensington is not due to any general abatement in the disease. The increase in the Fifteenth Ward is probably due to increase of population.

The Practice of Medicine in Connecticut.—The following letter is quoted as emanating from the Secretary of the State Board of Health of Connecticut, in reply to an inquiry from an applicant:

"SIR: Anybody can practise medicine in Connecticut. You do not need to register; you do not need a medical diploma; you do not need to know the difference between opium and peppermint—you do not, indeed, need to know anything. You can simply come and live here and begin to practise. The laws of Connecticut will sustain you in collecting your fees for professional services, if you render any which you choose to call such. But if you undertake to carry me or my trunk to the depot for pay, you must get a license. If you peddle matches or peanuts, you must get a license. If you collect the swill from your neighbors, to feed your pigs, you must get a license. If you want to empty your cesspool, you must get a license. But you can practise medicine in Connecticut *without a license*."

The Orchiococcus is the name devised for an organism upon which the orchitis or epididymitis associated with

gonorrhea is supposed to depend. It is described as a diplococcus, a little larger than the gonococcus, from which it differs by being readily cultivable upon peptone, peptonized gelatin, ordinary bouillon, and alkaline solutions of casein and nuclein. The orchiococcus is frequently found in the gonorrheal discharge during the first five days. In its absence, it is said, orchitis does not develop. The organism does not affect the conjunctiva, the areolar tissue, the peritoneum, or the urethra. Inoculation of the testis of a dog was followed by the development of orchitis. The same result was produced by inoculation of the inflammatory products.

The Cholera in Europe is increasing in many and widely separated places, but chiefly in Russia. Our consul at Odessa, Russia, reports 200 cases and 62 deaths in Chotin, Bessarabia; 500 cases and 220 deaths in Podolia, etc. He warns us that the official returns are not to be trusted and also of the danger from Russian emigrants. In Lorient, France, there were in the week ending March 13, 56 cases and 6 deaths. There was one death in London last week. In Hamburg money is being spent most liberally to equip hospitals and bring to effective preparation all the means and mechanisms ready for the evidently-expected recrudesence of the disease.

Relief Hospitals at the Columbian Exposition.—It is proposed to establish a series of movable hospitals or relief stations, at various points on the World's Fair grounds, by means of which the safety and comfort of the public will be greatly subserved. Patients requiring immediate attention can be taken into one of these relief stations and there receive such prompt expert care as will often render unnecessary their removal to the hospital. The great hospitals, the makers of hospital fittings and appliances, have readily agreed to establish and maintain these relief stations at their own expense.

Exclusive Publication of Papers.—The Constitution Committee of the American Medical Association advise: "Every paper accepted is understood to be contributed exclusively to the Association Journal." We think that a rule should also be given as to what will happen when a member disobeys and publishes a duplicate of his paper in another journal. In certain instances the unformulated rule seems to be, that if the fact be known the article is not published in the Association Journal, and is not included in the subsequent volume of section work. Cases of this kind happened last year.

Legal Control of "Patent Medicines."—A bill is pending in New York to give the State Board of Health the power to analyze patent or proprietary medicines. Receipt of a fee of $50.00 makes it compulsory upon the Board to make the analysis.

Another bill has also been introduced, making it a misdemeanor to sell or offer for sale such compounds, not prescribed by a physician, without the approval of the State Board of Health.

A United American Medical Association.—Concerning the intention of the Committee on Revision of the Constitution of the American Medical Association and as to the desirability of a united profession, no better words could be spoken than those quoted from the *American Lancet*, in another column. It would seem that every American physician should most earnestly assent to the main provisions and to the spirit of the proposed revision, and work henceforth to make the Association firmly united for the great work and opportunity before it.

The Death-rate in New York for the week ending April 1, 1893, was 33.2, the total deaths being 1149. We said two weeks ago that, as compared with Chicago, some 10,000 people are unnecessarily killed in New York City each year. According to the foregoing frightful death-rate we should have said 20,000. To all criticism of the sanitary condition of Chicago she may answer that her death-rate is the one magnificent fact in answer that shuts off all further discussion.

Should Alcoholic Liquors and Tobacco be Furnished to Prisoners?—In his medical report, Dr. M. V. Ball, physician of the State Penitentiary of the Eastern District of Pennsylvania, says that alcoholic liquor has not during the past year been used in the institution. "Its advantages as a medicine are few, its disadvantages many. We believe the time will come when tobacco will be prohibited in prisons, and we would like to see it come soon. There are good reasons, from a medical standpoint alone, why its use should be discontinued. In former times tobacco was allowed only with the doctor's consent, but now it is impossible to prevent those from using it for whom it is positively harmful."

Complications of Parotiditis.—In addition to the occurrence of orchitis in the course of an attack of parotiditis, it is pointed out that occasionally acute nephritis is also present as a complication.

Dentists in England.—The total number of registered dentists in England is 4817, of which 25.43 per cent. are graduates of dental colleges—a proportion steadily increasing.

SELECTIONS.

THE NEW CONSTITUTION (PROPOSED) OF THE NEW AMERICAN MEDICAL ASSOCIATION.

The key to these regulations is the *section work*. They are arranged so as to make this the greatest in amount, and the best in quality, possible under existing circumstances. If adopted by the Association, it will be an open declaration by that body that its watchword is hereafter to be *Scientific Medicine*.

It will be noted that there is but one class of members, which has the same individual duties and the same individual obligations. The qualifications for membership are but two: *First*, good standing in some one of the State societies or some local society recognized by the State society; *second*, the payment of the annual dues. Respecting the first, the officers of each State society are made responsible; for the second, the receipt

of the Association Treasurer is required. Hence if any physician brings to the Committee of Arrangements a certificate of good standing in his State medical society, and the Treasurer's receipt for dues to date, he will be admitted to active membership at once. If personally or by letter he does this same thing yearly, he can remain an active member so long as he lives. All disputes respecting doctors must be settled by the State societies or the local societies—by the society officials if possible, or if not, by arbitration as provided for by the Code of Ethics.

To be recognized by the American Medical Association, each State and its dependent local societies must accept the Code of Ethics of the Association as expressing the principles by which the conduct of doctors to each other and to the public should be guided.

The General Business Committee has the same powers as described by the report of the committee on its formation last year. The powers and duties of the several sections, with their executive committees, are stated with considerable fulness.

The annual addresses are eliminated, as belonging to a past stage of development, and the President's address is limited to thirty minutes. After the first day the hour of meeting of the general sessions of the Association is 4.30 P.M., all the preceding portion of the day being occupied by the section work.

It is so arranged that the real thinking for the Association shall be done in small standing committees, and the general meeting shall only hear the results of such thinking, accept or reject, or return it to the committees again for further study in certain directions. It is believed that from their representative character and relative permanence these committees will be able to consider deliberately and recommend the Association wisely, and leave all other members free to devote the entire day to section work, and the evening to social commingling.

Full and definite arrangements are made for so sifting the work done as to make it representative of the best activity of the year in all departments, and so by its quality commend it to all scientific workers throughout the world.

The only really National medical organization the United States has ever had does not, for some reason, command the adherence of the entire profession as it should. Further, the efforts made by its friends to enlarge its scope and power meet with indifference, if not positive antagonism, from those who should promote its welfare. Hence its voice is not heard above the din of the selfish intrigues of the ignorant boodle politician.

We have some hope that all true physicians may in the near future see the necessity of supporting and developing this National organization, to the end that it may speak with a united voice the wishes of the profession of the United States on occasions like the present.

If they see in this any new reason to believe that under its guidance this Association can be so developed as to be in fact the voice of the entire medical profession, they should lose no opportunity in securing the adoption of this new plan by the Association, not only by vote but by actual deeds. It is impossible to combine such vastly diversified elements, scattered over such wide extent of country, without much constant thought and persistent devotion to the idea of a National professional unity, combined with the largest individual liberty and fair dealing with each.

The time is ripe for such an organization; the elements are plastic, and, as never before, are awaiting the artist's hand, to be moulded into such a unity as shall represent the best thinking, the noblest feeling, and the most skilful work of the profession of the entire American continent.

The need is self-evident. The means for supplying it are at hand. What physician will fail to use the materials at his command for the attainment of a United Medical Profession in North America?—*The American Lancet.*

WATER-FILTRATION, ETC., AT HAMBURG.

THE improvements, which are nearing completion, consist of four large subsiding-basins and eighteen filtering-beds, on the principle of downward filtration through fine sand.

The water will be taken from a point 2.4 kilometers further up stream, so as to diminish the danger of contamination with sewerage effluvia.

The subsiding-basins are 350 meters long by 20 meters wide and 2 meters useful depth, with a capacity of 78,500 cubic meters each.

The water is allowed to settle twenty-one hours before it is drawn off into the filtering-beds.

The filters are eighteen large rectangular open basins, built of brick and cement on a clay base. The basins have been built with slanting walls on account of the marshy soil in which they are laid, and because a slanting wall excludes the possibility of leakage between the sand and the wall better than vertical ones.

Each basin has a surface of 7500 square meters, and a capacity of furnishing 11,250 cubic meters of water per day at a filtering rapidity of 62.5 millimeters per hour.

The arrangement of the filter is as follows: A layer of gravel and stone lies undermost to a thickness of 0.6 meter. A layer of sand 1 meter in thickness is spread over this. The water is kept to a depth of 1.1 meter over the surface of the sand.

The gravel and stone are laid in layers of graduated size, increasing from above downward. The sand and stone are well washed in revolving cylinders before being laid in place.

The inlet pipe to each filtering-bed is constructed with an automatic device, by which the water is kept at a constant depth of 1.1 meter above the surface of the sand.

The outlet pipe is so arranged that the rapidity of filtration is under good control, and that the filtrate from each basin may be examined separately. This important construction provides that any one, or any number of basins, may be excluded if found faulty.

From the filtering-beds the water will be conducted to large covered basins, which are designed only for storage until the water can be pumped into the city mains.

These improvements were begun in 1891, and were designed to be finished in three years, but on account of the cholera epidemic the work is being rapidly pushed forward. There are 3000 men working in relays day and night, and the authorities are exerting every effort to supply the city with filtered water before the summer sets in.—ROSENAU, *Abstract of Sanitary Reports.*

SANITARY PRECAUTIONS.

Nearly 6000 immigrants arrived at this port on Saturday, April 1st. A comparison with the official report for February shows how great a change has recently taken place in the immigration movement. The total number of immigrants arriving at all our ports in that month was only 12,568. Now we have almost half as many at the port of New York in one day.

It appears that about 2800 of these immigrants came from German ports, and 1500 of these from Hamburg. At Naples 2500 embarked. We presume that substantially all of those arriving from the last-named port are Italians, but it does not follow that nearly all of those coming from the German ports were residents of Germany, for Hamburg has been the port of departure for Russians, Poles, and Hungarians.

Some days ago it was announced that Asiatic cholera had passed across the western boundary of Southwestern Russia from the infected province of Podolia into Gallicia. It is now reported from Vienna that the disease is spreading rapidly in Southeastern Hungary. The condition of Hamburg itself is far from satisfactory, as we have shown heretofore. Several months must pass before the projected improvements designed to purify that city's water-supply can be completed. Moreover, the assumption may safely be made that the westward movement of cholera from the western provinces of Russia is in advance of the published reports, and that we shall soon hear that the disease prevails throughout Hungary and possibly that it has reached Austria and the ports at the head of the Adriatic. The history of the epidemic at Hamburg last year shows that sanitary authorities in this country should not rely upon the assurances of local authorities in Europe as to the actual condition of the cities where they hold office.

The conclusion to which a careful consideration of the situation in Europe clearly points is that, if we must be exposed to this great flood of immigration, it is necessary that all possible sanitary precautions shall be taken without delay. With respect to Hungary, for example, it is known that the disease prevails there, and that immigrants come from that country. Immigration from Hungary ought to be stopped now, but if persons from that country are permitted to come, they and their baggage should be subjected to the most thorough inspection. Even in February, when the number of immigrants arriving was comparatively very small, we received 217 from Hungary, and in the two months of January and February the number was 1041. Undoubtedly there has been a marked increase in the last month.—*N. Y. Times.*

SOCIETY PROCEEDINGS.

THE NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, April 4, 1893.

The President, Dr. M. Allen Starr, in the Chair.

Dr. G. M. Hammond presented a case of posterior spinal sclerosis which he had been treating with hypodermatic injections of cerebrin. Six years ago the patient, a man aged forty years, began to suffer with double vision. This, after several months of treatment, disappeared, and for a time he was quite well. Then the typical symptoms of posterior spinal sclerosis appeared: loss of knee-jerks; sharp pains in the legs; ataxic gait; inability to stand with the eyes closed, even with the legs some distance apart; difficulty in evacuating bladder and bowels; loss of sexual power; sense of constriction of the waist. There were no ocular symptoms. The man denied syphilis. After about ten weeks of treatment with a daily hypodermatic injection of five minims of cerebrin, combined with five minims of water, the improvement was quite marked. The sexual functions and control over the bladder and bowels were perfectly restored; the sharp pains disappeared; the general health was improved; and the man was able to run up and down stairs, and stood fairly steady with his eyes closed. The knee-jerks, however, had not returned. No other treatment was employed. The improvement was gradual and steady, and began about a week after the first injection.

Dr. Joseph Collins said that in a few cases of posterior spinal sclerosis in which he had employed subcutaneous injections of the cerebrin prepared by Gibier, the improvement was about equal to that in Dr. Hammond's patient. It is not uncommon, he said, to see the virile powers return in these patients; this has occurred after applying blisters to the spine.

Dr. Hammond also presented a boy who, two years previously, while rowing a boat, found the oar slip from the left hand, from loss of power in the fingers. After about five minutes he was able to use the four fingers, but not the thumb, and from that time the paralysis progressed, first extending to the other muscles of the hand and gradually to those of the arm. Fibrillary twitchings were marked. The boy presented hemiatrophy of the tongue and paralysis of one of the ocular muscles, with double vision. The power of whistling and that of speaking certain words were lost. There was swaying on standing with eyes closed, and loss of knee-jerks on both sides; but no other ataxic symptoms, no sharp pains, no bladder or bowel symptoms, no anesthesia or paresthesia. The expression of the boy's face was rather characteristic of hereditary syphilis; the boy's father was under treatment for syphilis. There was no history of acquired syphilis. Dr. Hammond presented the case as one of progressive muscular atrophy, probably of specific origin.

Dr. B. Sachs read a paper on "Syphilis of the Spinal Cord." He reviewed some recent work of Erb, who has sought to establish a "type" of spinal-cord disease which he proposes to label "syphilitic spinal paralysis." This special type is to be recognized by the following characteristics: 1. The usual symptoms of spastic paraplegia, with its peculiar gait, carriage, and movements. 2. The reflexes are much exaggerated. 3. The muscular contractures are slight, as compared with the exaggeration of the reflexes. 4. Involvement of the bladder. 5. A slight but distinct disturbance of sensation. 6. Gradual onset of the disease. 7. A decided tendency to improvement.

Dr. Sachs did not dispute the existence and the propriety of Erb's type of spinal disease, but he expressed the belief that there are other and broader points of diagnosis that should not be disregarded. To illustrate

these points, he gave the history of four cases of undoubted syphilitic disease of the spinal cord. In these cases the following were the salient features which led to the diagnosis: In three of them there was spastic paraplegia of the most pronounced type. In these the reflexes were greatly exaggerated. In two the muscular contractures were slight; in one they were extreme. In one there was permanent involvement of the bladder. In all but one sensation was disturbed. In two the onset was gradual. All had shown a decided tendency to improvement. In one instance there was a distinct atrophic paralysis, with all the symptoms that pointed to a widespread affection of the gray matter of the cord. In one case, in which the diagnosis of syphilitic disease was most evident, the contractures were extreme; the bladder remained persistently involved; and bedsores formed.

Dr. Sachs said that the following points have impressed themselves on his mind as the more characteristic of spinal-cord syphilis: 1. The unusual distribution of the disease over the greater portion of the cord, involving, in some cases, the cervical, lower dorsal, and lumbar enlargements. 2. The relatively slight intensity of the morbid process, as compared with the extensive area involved, as evidenced by the preservation of some of the functions of the cord, with complete loss of others. 3. A rapid subsidence of some symptoms and a very chronic persistence of others. 4. The frequent history of other symptoms pointing to syphilitic infection in the same or in other parts of the central nervous system.

In syphilitic spinal-cord disease there is not, as in cases of acute myelitis, a morbid process that is rapidly destructive and that quickly advances through the entire cross-section of the cord, with symptoms due to loss of function of the various spinal systems. If the syphilitic disease be the result of a specific endarteritis of the vessels of the cord, we know that some, and by no means all, of those vessels are affected; and that the disease advances slowly from one group to another. If there be diffuse specific infiltration, one part after the other is slowly invaded. The process has a remarkable tendency, too, to advance for a time and then to recede, whether as a result of treatment or not, and then possibly to increase with renewed force. If the infiltration start from the meninges, it most frequently invades the lateral columns first, often at symmetrical points, and advances very slowly from white to gray matter. The intensity of the process is spent upon the lateral columns; hence the frequency of the spastic symptoms. It may invade the gray matter, giving rise to sensory symptoms, sometimes to atrophic symptoms.

DR. C. L. DANA said that, in one case of spinal-cord syphilis coming under his observation, the patient died of an intercurrent disease, and an autopsy was obtained. The type of symptoms in that case resembled so closely what Gowers has described as ataxic paraplegia that that was the clinical term applied to it. The autopsy showed a transverse myelitis, of specific origin, in the dorsal region, and the appearance of the lesion was much like that described by Dr. Sachs—starting from the meninges and gradually invading the substance of the cord. Dr. Dana added that he has almost come to the conclusion that tranverse myelitis, not manifestly due to hemorrhage, tumor, injury, etc., and not of sudden development, but of gradual and irregular onset, is presumptive evidence of a specific origin.

DR. L. C. GRAY said that he had long regarded with suspicion any case of paralysis of the upper or lower extremities, with marked contractures, with or without exaggeration of the tendon-reflexes. This is particularly true in cases in which the symptoms are unequal or asymmetrical. The poison of syphilis, however, is so diffused that it is unsafe to assume that its effect is spent entirely upon any particular set of fibers in the spinal cord, and it is difficult to lay down a certain class of symptoms which should be present in these cases.

DR. ROBERT S. NEWTON detailed the history of a patient who developed symptoms of a transverse myelitis while under active treatment for syphilis, the treatment at the time having been persisted in for over a year.

DR. L. C. GRAY opened the discussion on "The Present Status of Craniectomy." He stated that about three years ago Lannelongue proposed the operation of craniectomy for the relief of mental defects in children. The causes of such mental defects are, in the main, porencephalitis, meningitis and meningo-encephalitis, hemorrhage, either diffuse or localized; trauma, hydrocephalus, myxedema, possible premature ossification of the skull, mainly in the region of the sutures and fontanels. The last cause has been brought into prominence lately by Lannelongue's operation, although the idea was advanced in 1851 by Virchow, in a memoir upon cretinism. It is impossible to obtain, in this country at least, a sufficient number of skulls of idiots whose histories have been carefully recorded, to determine the question. Tacquet has examined twenty-nine skulls of idiots, and has expressed the belief that premature obliteration of the sutures of the cranium is not more common in idiots than in healthy individuals.

Dr. Gray said that he is entirely at a loss to understand how an examination of the skulls of idiots could throw any light upon the question as to whether or not primary ossification of the sutures and fontanels arrested the development of the cerebrum. He expressed the opinion that only those cases of idiocy dependent upon premature ossification of the sutures and fontanels, recent traumatic injuries, and hemorrhages, can possibly be benefited by craniectomy; for porencephalitis, meningitis, meningo-encephalitis, and myxedema are lesions that cannot in any way be affected by the surgeon's knife. A correct diagnosis is of the utmost importance. If, in any case of idiocy, a reliable history can be obtained from someone who has been with the child from birth, preferably its own mother, and trauma, meningitis, hemorrhage, and myxedema can be positively excluded, there will then be only so-called tuberous hypertrophy, porencephalus, and premature ossification of the sutures and fontanels to be dealt with. Tuberous hypertrophy is so rare as to be practically out of consideration. Porencephalus generally occurs in fetal or early infantile life, and will, in a vast majority of cases, cause some paralysis of motion or sensation. Porencephalus, meningitis, hemorrhage, trauma, and tuberous hypertropy are likely to cause some organic destruction of the cerebrum or cerebellum, and this must manifest itself by mutism, blindness, motor paralysis, localized convulsions, or contracture of a single limb, or of both

an upper and a lower limb on the same side. If in an idiot child these symptoms be wanting, it seems quite reasonable to make a diagnosis of premature ossification of the sutures and fontanels as causative of the mental condition. Dr. Gray said that he was quite willing to believe that the pressure of a non-expanding skull upon a cerebrum expansile with developing tendencies is sufficient to cause such symptoms of cerebral irritation as strabismus, generalized convulsions, inability to walk, contractures, violent temper, involuntary micturition and defecation, and various general muscular movements that cannot be classified. This is precisely the point that has not yet been tested by the operations that have been performed. In concluding, Dr. Gray narrated five cases of craniectomy that have come under his observation.

Dr. C. L. Dana presented a boy, six years old, upon whom craniectomy had been performed about a year previously. The child was an illegitimate one, and nothing is known of his history up to the first year of his age. He was rachitic; the fontanels were large and closed during the third year. During the first three years of life three or four general convulsions occurred daily. Up to the time of the operation the boy was unable to swallow, except when in the semi-recumbent position, and he could only take liquid food. He could not say a word or express a thought. On measurement, the head was found to be below the normal size. A few weeks after the operation the child began to talk and could masticate and swallow solid food. There was decided and striking increase in the child's intelligence a few weeks after the operation. The great circumference of the head increased one-half of a centimeter; the naso-occipital circumference increased nearly two centimeters. The head has thus grown a little faster than is usual in children of a corresponding age.

Dr. Dana also narrated three other cases of craniectomy coming under his observation. All died from shock soon after the operation. In conclusion, he stated that he does not see how any conclusions can be drawn, one way or the other, as regards the determination of what class of cases should be operated on. Cases of infantile hemiplegia, with epilepsy and idiocy, can hardly ever be benefited by the operation.

Dr. B. Sachs gave the histories of three cases of craniectomy coming under his observation. In the first two, death rapidly resulted from shock. In the third case a longitudinal section of bone was removed from one side of the skull, and the child recovered. Some months afterward a second operation was undertaken for the purpose of removing a like section of bone on the opposite side of the head. This operation proved fatal. Dr. Sachs presented the skull of this patient. It showed that the longitudinal opening made at the first operation had become firmly closed by the dura (which had not been opened) and by a dense fibrous mass. This had occurred during the two months intervening between the first operation and the time of the child's death. This specimen showed that the removal of a long strip of bone is not effective and does not relieve the general pressure. The results would, no doubt, be better if a large segment of bone were removed in the frontal region, thus giving that portion of the brain which needs it most a chance to develop. In a considerable number of cases of idiocy it is the frontal portion of the brain that is deficient. The proper cases for operation are those that present the symptoms of idiocy without any of those of organic disease of the brain, exc epting retarded development.

Dr. G. M. Hammond said that five cases of idiocy for which craniectomy was performed have come under his observation. His own experience, as well as the experience of others, with Lannelongue's operation has led him to the conclusion that it only stops idiocy by stopping the life of the child. Of the five patients he has operated on, two died from shock. In the other three cases—each operated on by a different surgeon—there was slight improvement in the intelligence of the children. Not a single case has thus far been reported in which the idiocy was cured. The patients are merely transferred from one degree of idiocy to another. In his opinion, the proper cases to select for operation are those in which the patients are only slightly idiotic—not the hopeless cases—and it is well to operate early, before degenerative changes have occurred. The operation should not be undertaken after the sixth or seventh year.

Dr. Starr, in reply to a question, said that craniectomy has apparently been undertaken without regard to age. Keen operated on a patient aged nineteen years; Hammond, Sr., operated on one aged twenty-two years, and Weir operated on one aged eighteen.

Dr. E. C. Seguin said that for a long time he has held the opinion that the early closure of the fontanels and the premature ossification of the cranium were secondary to the arrest of development of the brain, and he has always advised against operative interference in these cases. Now he stands ready to be convinced as to the value of craniectomy for the relief of such patients. The cases thus far reported, he thought, were not very hopeful. The improvement noted in a few cases has been slight, while the surgical results are far from encouraging.

The President said that he thought that the members took too pessimistic a view of the operation. He has had six patients operated on, without a single death. The total number of cases reported by the various speakers was 23; of these, 7 proved fatal. Aside from these, he has collected 37 cases, with 14 deaths—a mortality of about 33 per cent. This rate of mortality is not so very high if it be borne in mind that the operation is undertaken to relieve an apparently hopeless condition.

Of the six cases that have come under his observation, three have materially improved in intelligence; the other three were operated on too recently to warrant any definite report at present. Lannelongue's operation was found to be inefficient, as the area of bone removed soon becomes filled up with dense fibrous tissue; so that Wagner's operation was adopted. With the grooved chisel, a curved, omega-shaped incision is made through the skull on one side. This flap of bone is then firmly grasped and raised upward, until it becomes fractured, thus giving plenty of room to the brain underneath. The flap of bone is permanently fixed in its raised position. In one case, both sides of the skull were treated in this way. The chisel, when properly used, causes very little shock. By means of it the work is performed much more speedily than with the trephine. The chisel must be very sharp, such a one as is used for cutting ivory.

In conclusion, Dr. Starr said that his experience in these cerebral cases has led him to believe that we know as yet very little about the various pathologic conditions of the brain.

The following officers were reëlected for the ensuing year: Dr. M. Allen Starr, President; Dr. B. Sachs, Vice-President; Dr. E. D. Fisher, Secretary.

NEWS ITEMS.

Medical Matters at New Orleans.—Dr. Albert B. Miles has been elected to succeed the late Dr. Samuel Logan as Professor of Surgery in Tulane University. He is House Surgeon to the Charity Hospital, and was the Professor of Materia Medica and Therapeutics; he has temporarily filled the chair of Surgery since Dr. Logan's death. Dr. L. F. Reynaud, who was formerly Lecturer on Clinical Medicine, will be Professor of Materia Medica, Therapeutics, and Clinical Medicine.

At the recent graduation exercises of Tulane University there were ninety-two graduates. The valedictory was delivered by Dr. W. H. Woods, of Mississippi.

The Training School for Nurses in the Charity Hospital will open in May. No men will be admitted as students in the Training School this year.

Tulane University will in the future require a preliminary examination, and a three years' graded course.

The Louisiana State Medical Society will meet in New Orleans on May 9th, and remain in session for three days. The members have shown more interest this year than usual, and some excellent papers will be read.

Eleventh International Medical Congress, Rome, Italy, September 24 to October 1, 1893.—It is announced that the North German Lloyd Steamship Company offers a reduction of 25 per cent. to physicians going to and coming from the Eleventh International Medical Congress on the steamer Werra, which is to sail from New York on August 5th and September 9th, and on the steamer Fulda, on August 19th. Both steamers sail to Genoa. The same reduction will be made for the return trips in October and November, on the same steamers, and for the Company's Saturday (from Bremen, Sunday from Southampton) steamers.

The Hamburg-American Packet Company offers a reduction of 25 per cent., both going and coming, for all its steamers during the year 1893.

The Compagnie Générale Transatlantique offers the rates which are allowed French officers, that is, $63.50 for an $80 accommodation and $91.50 for a $120 accommodation.

Examinations for the Marine Hospital Service.—A board of officers will be convened at Washington, D. C., June 26, 1893, for the purpose of examining applicants for admission to the grade of assistant surgeon in the United States Marine-Hospital Service.

Candidates must be between twenty-one and thirty years of age, graduates of a respectable medical college, and must furnish testimonials from at least two responsible persons as to character.

For further information or for invitation to appear for examination, inquiries should be addressed to Dr. Walter Wyman, Supervising Surgeon-General U. S. Marine-Hospital Service, Washington, D. C.

Dr. George C. Shattuck died at Boston on March 22, 1893, in the eightieth year of age. He was, with Bowditch, Gerhard, Stillé, and Metcalf, a pupil of Louis's. For thirty-six years, until 1885, he was one of the visiting physicians to the Massachusetts General Hospital. He had also been Professor of Clinical Medicine and Professor of the Theory and Practice of Medicine and Dean in the Harvard Medical School.

Albert Friederick Stifel, Ph.G., M.D., died at his home in Wheeling, West Virginia, April 10th, in the thirty-eighth year of his age. Death was due to glioma of the frontal lobe of the brain, the optic chiasm and nerves having become destroyed by the neoplasm. He made a correct diagnosis of the cause and location of the lesion prior to his death.

The Medical Association of Georgia held its forty-fourth annual session at Americus, Georgia, April 19, 20, and 21, 1893. A lengthy and interesting program was presented. Dr. A. A. Smith, of Hawkinsville, presided. Dr. Dan. H. Howell, of Atlanta, is the secretary.

The Medical Society of the State of North Carolina will hold its fortieth annual meeting in the city of Raleigh, May 9, 10, and 11, 1893. Dr. J. W. McNeill, of Fayetteville, will preside. Dr. Robert D. Jewett, of Wilmington, is the secretary.

The Texas State Medical Association will hold its twenty-fifth annual session at Galveston, May 2, 3, 4, and 5, 1893. Dr. J. D. Osborn, of Cleburne, will preside. Dr. H. A. West is the secretary.

BOOKS AND PAMPHLETS RECEIVED.

Salicylates in the Treatment of Pleurisy with Effusion. By George Dock, M.D. Reprinted from the Therapeutic Gazette, 1893.

Notes on the Appendix Vermiformis: Anatomical and Clinical. By George Dock, M.D. Reprinted from the Transactions of the Michigan State Medical Society, 1892.

A Clinico-Pathological Study of Injuries of the Head, with Special Reference to Lesions of the Brain Substance. By Charles Phelps, M.D. Reprinted from the New York Medical Journal, 1893.

A Case of Eczema with Urticaria as a Complication. By J. Abbott Cantrell, M.D. Reprinted from the Philadelphia Polyclinic, 1893.

Psoriasis and Syphilis. By J. Abbott Cantrell, M.D. Reprinted from the Philadelphia Polyclinic, 1893.

The First International Congress of Gynecology and Obstetrics. By George M. Edebohls, M.D. Reprinted from the New York Journal of Gynecology and Obstetrics, 1893.

The Prevention of Hernia after Incision of the Abdominal Walls. By George M. Edebohls, M.D. Reprinted from the New York Journal of Gynecology and Obstetrics, 1893.

Handbook of the Diagnosis and Treatment of Diseases of the Throat, Nose, and Naso-Pharynx. By Carl Seiler, M.D. Fourth edition. Philadelphia: Lea Brothers & Co., 1893.

The Clinical Examination of Breast Milk. By L. Emmett Holt, M.D. Reprinted from the Archives of Pediatrics, 1893.

Report of the Quarantine Commission. Harrisburg: Edwin K. Myers, State Printer, 1893.

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ORIGINAL ARTICLES.

OINTMENT-BASES.

BY JOHN V. SHOEMAKER, A.M., M.D.,

PROFESSOR OF MATERIA MEDICA, PHARMACOLOGY, THERAPEUTICS, AND CLINICAL MEDICINE, AND CLINICAL PROFESSOR OF DISEASES OF THE SKIN IN THE MEDICO-CHIRURGICAL COLLEGE OF PHILADELPHIA.

FAT is an essential constituent of the skin. It is present between the meshes of the white fibrous and yellow elastic tissue of which the corium is composed, and is the main element of the secretion of the sebaceous glands. Sebum consists of fat-cells and free fat mixed with epithelial detritus. Analysis shows that sebum contains 40 per cent. of palmitin and olein and 35 per cent. of water, together with casein, gelatin, and a small quantity of sodium chlorid, sodium phosphate, and sodium sulphate. These facts of anatomy and chemistry demonstrate that fatty material is necessary to the nutrition of the integument. The close relationship between the sebaceous ducts and the hair-follicles suggests that the secretion contributes to the nourishment of the hair-bulb and shaft. The fatty material preserves the epiderm from maceration by profuse perspiration, counteracts the effect of irritant discharges upon the outlets of the body, and lessens friction between opposing surfaces. It also protects the surface against variations of temperature. Sebum may, therefore, be justly regarded as the prototype of an unguent.

When, as the result of local or general disease, or from the gradual wasting of tissue which takes place in old age, the nutrition of the skin is impaired, we are able by inunction to restore the nutrient material of which the integument stands in need. The hair and nails suffer or improve with the surface of which they form a part and from which they spring. The intelligent application of an ointment is, consequently, beneficial to the appendages as well as to the integument.

Abnormal surface-heat is reduced by the topical application of fat. This property was pointed out by Professor Senator, of Berlin, and corroborated by the exact thermometric observations of Dr. Colrat, of Lyons. Dr. Colrat found that lard, cerate, and vaselin, when spread upon the skin, had the power of reducing not only the local, but also the general temperature. About an hour after the fat was applied the temperature had fallen from 1.4° to 3.6° F. Two hours later the temperature had ascended to the starting-point, and the unguent was again needed.

Turgescence of the cutaneous capillaries generally gives rise to that peculiar and often very distressing disturbance of sensation known as itching. This symptom is an attendant upon most diseases of the skin. It probably depends upon a modification of the terminal fibrillæ of sensory nerves, produced by moderate pressure, as in local hyperemias; by the development of nodules, as in urticaria and prurigo, or by some alteration in the quality of the blood. The action of fat in abstracting heat and in alleviating pruritus explains the usefulness of its application in the eruptive fevers of childhood, more especially in measles and scarlet fever. The effect of this simple procedure is often so marked that little patients will ask to be greased, after they have experienced the relief to which it gave rise. The commoner forms of fat found in every household—bacon-fat, lard, suet, butter—answer the purpose, though cold cream is equally efficient and is a more acceptable application.

Fat is useful in protecting the surface from the effect of discharges poured out from some natural outlet or seat of disease. The fluids of eczema are sometimes highly irritant and serve to extend the disease over a wider surface. Acrid secretions from the vagina and intestinal canal very commonly excite diseased action in the skin over which they pour. Incontinence of urine in children or the dribbling of urine in cases of old stricture, urinary fistulæ, enlarged prostate, and paralysis of the bladder, also lead to inflammation. In all of these conditions, if the origin of the difficulty cannot be removed, the greasing of the surface will, at least, sensibly diminish the cutaneous irritation.

An ointment is beneficial in the desquamative stage of scarlatina by preventing a wide dispersal of the scales, and, to this extent, it exerts a certain prophylactic influence.

Medicinal ointments almost invariably consist of one or more remedial agents incorporated in a fatty substance. In consideration, however, of the important properties possessed by fats or oils, as such, independently of the drugs which may be added to them, it is obvious that the fat itself, the base, the vehicle, or excipient of the ointment, is by no means a factor of indifference.

Fats are derived from either the animal or vegetable kingdom of nature. Those from the former

source are generally solid, and those from the latter are usually fluid. No wide difference of chemical composition accompanies this variation in physical form. Most of the animal or vegetable fats or oils may be used in the preparation of ointments, though some of the vegetable oils are of too irritant a character to be used in full strength and, when used, must be regarded in the light of medicated ointments. In this capacity some have proved useful in certain obstinate affections of the skin.

The substances ordinarily used as ointment-bases are lard, suet, petroleum-jelly, and lanolin. To this list may be added butter, spermaceti, cacao-butter, and the glycerite of starch. Whichever is chosen should be used only in a pure state. Fats and oils, as is well known, are peculiarly prone to undergo decomposition when exposed to the air, becoming converted from neutral into acid bodies. The fatty acids produced during the alteration are not only offensive to the sense of smell, but are also decidedly deleterious to the skin. Petroleum-jelly, though of mineral origin, belongs among the fats by virtue of its chemical constitution, and possesses the excellent quality of resisting chemical change for an indefinite period. This, together with its pleasant appearance, its freedom from odor, and its consistence, has caused it to be very widely used as an ointment-base. It is, however, not free from objections. Although it does not readily undergo decomposition, yet from its mode of manufacture from so highly complex a fluid as petroleum, it is liable to be contaminated with irritant substances which unfit it for service as an ointment-base or simple ointment. Again, its unabsorbability is in many, if not in most, instances an argument against the use of petrolatum.

Much debate and fluctuation or contrariety of opinion has existed as to whether alkaloids, salts, and other medicinal substances dissolved in fluids or thoroughly incorporated in a fat could be absorbed into and through the skin. That animal fat can penetrate the skin has been indisputably proven by a number of clinical and experimental observations. Cachectic children often gain in weight and strength under a course of inunction of cod-liver oil. That, applied to the skin, alkaloids can be carried into the circulation by the fat with which they are mixed is demonstrated by the occurrence of physiologic effects. That salts may be conveyed into the economy in the same manner is shown by their subsequent appearance in the urine, as recognized by the proper tests. The subject of cutaneous absorption has recently been studied by Dr. Leon Kopff, of Krynica. His conclusions as regards ointments are thus expressed: "Salts applied to the integument in the form of ointments reach the organism and may be recognized in the excretions. The quantity absorbed in this manner seems to be very little, but it is considerably larger, comparatively, than that taken up from watery or alcoholic solutions. It follows, therefore, that the absorptive capacity of the skin for salts, applied in the form of ointments, is relatively high. Just as is the case with watery and alcoholic solutions, different salts rubbed up with ointments are absorbed in different proportions."

Lard is one of the oldest and one of the best excipients, and is the basis of most of the officinal ointments. It is readily absorbed, but is open to the disadvantage that it rapidly undergoes alteration. This tendency to decomposition, however, can be easily overcome by the addition of benzoin or a small quantity of beta-naphthol. Lard contains a large proportion of olein, which, being of fluid consistence, is in a fit state for absorption. Suet also forms a good basis. It is firmer than lard, as it consists of a preponderance of stearin and palmitin, with a much lower proportion of olein than is present in lard. Its greater stiffness will sometimes cause suet to be preferred to lard, and, in other instances, the two may be used in conjunction. Suet, on the other hand, in consequence of its chemical composition, does not penetrate the skin as rapidly as lard.

Animal fats are capable of passing into the organism by way of the skin, and influencing local, or even general, nutrition. The same statement may be made concerning the vegetable oils sometimes employed in preparing ointments, as, for instance, olive oil. Vegetable oils, whether taken into the system by the mouth, by subcutaneous injection, or by absorption through the skin, are converted into animal oils and thus may form a constituent portion of the body. This is not the case with petroleum fat. Petroleum, vaselin, cosmolin, or by whatever name it is known, is an unabsorbable substance, which has no affinity for animal tissues. It is insoluble in the animal fluids, and when taken by the mouth it passes through the alimentary canal without change of state, and, consequently, without absorption. It is not converted into animal fat when thrown beneath the skin. It is not capable of passing through the integument. Its function, therefore, as an external medicament must be restricted to a superficial action upon the epiderm, abraded or ulcerated surfaces.

The sole conspicuous merit possessed by petrolatum, viz., stability of composition, is shared by an excipient introduced in 1886, by Professor Liebreich, of Berlin. I refer, of course, to lanolin, which, as now made by improved processes, is a white unctuous substance almost entirely devoid of odor. The scarcely perceptible scent which may still adhere to it can be effectually disguised by the addition of

some agreeable perfume, as, for instance, a few drops of oil of bergamot, neroli, or rose. It is thus rendered so agreeable as to be a pleasant toilet article. Lanolin is, in fact, fitted, by several of its properties, to be used as a cosmetic application.

Being itself a derivative of horny tissue, we should naturally expect that lanolin would be easily absorbed by the epiderm and the glandular follicles, which are lined with young epithelial cells belonging to the same layer. This inference from its origin is justified by experience. Lanolin rapidly disappears when rubbed into the skin, and narcotic extracts incorporated with lanolin produce their characteristic effects when applied externally in twice the dose which is efficient by the mouth. Lanolin is peculiar in its power of absorbing water, of which it can take up more than twice its own bulk. In this quality it far exceeds all other ointment-bases. It has been shown by Unna, also, that the more water a fat is capable of absorbing, the more readily that fat itself is absorbed into the skin. Lanolin combines without difficulty with other oils, fats, and glycerin.

Lanolin is an aseptic substance. It is impermeable by microörganisms. This valuable triad of qualities—aseptic nature, unalterability, and easy absorbability—renders lanolin of decided importance in a wide range of disease-conditions as a medicament in itself and not merely as an excipient.

It has been found that lanolin is extremely effective in extinguishing mercury. Equal parts of lanolin and metallic mercury can be intimately mixed within ten minutes, and after trituration for half an hour no mercury can be detected by aid of the lens. For this reason the last edition of the Austrian Pharmacopeia directs that lanolin be used in the preparation of mercurial ointment.

Spermaceti is sometimes added to lard in order to render the unguent of firmer consistence. Spermaceti is of neutral reaction and bland taste, and, when pure, is an unobjectionable ingredient. It, however, rapidly becomes rancid upon exposure to the air. Cacao-butter is a pleasant substance to the taste and smell and of a neutral reaction. Like spermaceti, however, it is of unstable composition.

Practically, therefore, our choice of an ointment-base[1] is, in the vast majority of cases, narrowed down to lard and lanolin. Lard is often advantageously rendered firmer by the addition of suet or wax, while the slight stickiness belonging to lanolin can be overcome by mixing 65 parts of anhydrous lanolin with 30 parts of liquid paraffin and 5 parts of cerasin, as originally proposed by Mr. Helbing.

[1] For further observation on ointments, see author's work on Ointments and Oleates, especially in Diseases of the Skin. F. A. Davis Co., Philadelphia, 1890.

I have mentioned the chief qualities which fat possesses in the treatment of diseases of the skin. The base constitutes the principal part of any ointment by weight and bulk, though its medicinal action is, in many instances, only of a subsidiary character. But there are many important pathologic conditions in which the fat, the ointment-base itself, is of more consequence than the drug or drugs which it may contain. One class of these I have already mentioned and need not repeat, viz., the eruptive fevers. Pain, heat, and itching in simple erythema, erythema nodosum, superficial burns, acute eczema and erysipelas, are relieved by inunction. If any medicinal substance be added to the base, it must be of the blandest character, such as bismuth, lead, zinc, or cucumber juice. Lard is emollient and, as a rule, is preferable to lanolin in acute eczema, as the disordered type of nutrition expressed by the local disease may be heightened by the application of a substance that tends to increase nutritive action. On the other hand, its aseptic nature peculiarly qualifies lanolin to serve as an ointment-base in cases of erysipelas.

In the foregoing, in conformity with the title of my paper, I have confined my observations to the ointment-bases themselves, or, in other words, to simple ointments. To consider fat as a vehicle for substances of varied properties, employed for various purposes, would lead me far beyond the limits of my subject. It would, in fact, be tantamount to a review of the whole topic of local therapy by means of ointments. I will, therefore, content myself with an enumeration of the various uses to which medicated ointments may be put. They may be employed for the purpose of stimulating granulation and reparative action in ulcers due to traumatism, varicose veins, scrofula, lupus, etc. Ingredients of more or less stimulating character are here required in accordance with the nature and chronicity of the case. In these conditions petroleum jelly may be serviceably used, as what we desire is a direct action upon the circulation, nervous influence and nutrition of the part involved, and not a deeply penetrative action.

A more intense degree of activity may be utilized for the destruction of small benign tumors of the skin, and of nodules, as warts, venereal growths, lupus, etc. Such applications, likewise, are sometimes of benefit in superficial epitheliomatous ulcers.

Medicated ointments are applied with benefit to modify the capillary circulation of the skin, as in hyperidrosis, seborrhea, acne, rosacea, alopecia, psoriasis, etc. In most of these cases a penetrating excipient, as lard or lanolin, is to be preferred. In psoriasis there is no objection to the use of petrolatum, as our object is to act upon the

hypertrophied papillæ and the infiltrated superficial layer of the corium.

Ointments may be used, on account of their influence upon cutaneous nerves, in urticaria, hyperesthesia of the skin, dermatalgia, paresthesia, prurigo, etc. A base which can pierce the epidermic layer and bring the medicament into contact with the nerve-endings should have preference.

The nutrition of the skin and its appendages, as in ichthyosis, senile atrophy of the skin, sclerodema, atrophy of the hair, etc., is promoted by inunction with lanolin, associated or not with other remedial substances.

In the treatment of parasitic diseases of the skin, such as scabies, tinea versicolor, favus, trichophytosis, we need a base which is capable of carrying the parasiticide into the interstices of the epithelial layer and into the glandular follicles.

According to Unna, fat spread upon the skin has an effect upon the circulation through the kidneys by diminishing evaporation from the skin.

A simple ointment-base, such as lard, lanolin, or olive oil, is of material assistance in softening and loosening crusts, scales, and scabs, and in exposing the affected surface to the action of appropriate remedies.

A layer of fat upon the skin prevents atmospheric contact and diminishes the danger of bacterial infection. Inunction with cod-liver oil improves systemic nutrition in rickets, scrofula, chronic dysentery, and tuberculosis. Lanolin enhances the activity of chrysophanic acid, naphthol, salicylic acid, pyrogallol, and resorcin.

A NEW AID IN THE DIAGNOSIS OF LATERAL CURVATURE OF THE SPINE.

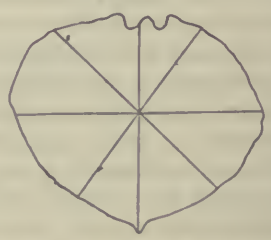
BY ELEANOR TOMES, M.D.,
INTERNE AT THE NURSERY AND CHILD'S HOSPITAL, STATEN ISLAND.

IN this short paper I shall detail a few of the cases of scoliosis which I have examined, and describe a new method of measuring patients in whom the deformity is either evident or suspected.

CASE I was that of a girl fifteen years old, with slight deformity. On inspection it was found that the spinous processes of the dorsal vertebræ, from the fifth to the tenth, made a curve to the left. The seventh dorsal vertebra was 0.008[1] from the median line. At the middle of the curve the deviation was 0.023, and the muscles bulged a good deal. On the opposite (right) side there was a marked depression between the ribs and the hip. The apex of the right scapula was 0.008 higher than that of the left, and the whole bone projected backward. The inner border of the right scapula measured 0.078 from the spine, while the corresponding border of the left was only 0.058. By Adams's test[1] (". . . . the patient is examined in a stooping position, with the legs together and the head bent forward on the chest. . . .") the deviation of the dorso-lumbar vertebræ was very obvious, as well as the projection backward of the ribs on the left side, with the corresponding flattening of the ribs on the right side.

Two casts of the thorax were taken, one at the axillæ, and one (Fig. 1) at the level of the tenth rib. These casts were formed by the aid of a hinged cyrtometer. This instrument consists of two pieces of lead tape joined by a double hinge. The center of the hinge is applied directly over the spinous process of a vertebra; the two tapes are carefully moulded to

FIG. 1.



fit the sides of the chest, and are brought together over the sternum. By means of the hinge the cyrtometer is removed from the thorax without losing any of the irregularities formed during the moulding process, and is laid on a flat surface. Then the ends of the instrument, which met over the sternum, are carefully approximated, a mould resulting into which is poured liquid plaster-of-Paris. When this hardens, we have a cast which represents a transverse section of the thorax. These casts show:

"1. Any inequality between the two halves of the chest, in either transverse or antero-posterior diameter.
"2. The projection backward of ribs behind the level of the spine.
"3. The displacement of the spinous processes of the vertebræ to the right or left of the median plane of the body.
"4. A displacement of the sternum, if it exist.
"5. In some cases the rotation of the entire thorax, which looks as if it had been seized by the hands and twisted, while the shoulders and pelvis remained fixed." (Mary Putnam-Jacobi.)

In the cast taken at the axillæ, or upper portion of the curve, the deviation accords with the description, and at this level is slight. The antero-posterior line drawn from the middle of the sternum falls only 0.007 to the right of the median line, showing a correspondingly slight displacement of the vertebræ to the left. The line of the ribs, however, is 0.016 back of the level on the right side, and 0.014 on the left. The transverse diameter is 0.125 on the left (side of the deviation), and 0.130 on the right side. The greater antero-posterior diameter of the left side is 0.187, that of the right 0.190. The greater transverse diameter, the greater bulging of the ribs and consequently the greater antero-pos-

[1] The measurements are those of the metric system.

[1] Adams: Lectures on Curvature of the Spine, p. 273. London, 1882.

terior diameter, are on the side opposite to that of the deviation of the spines, as mentioned in the *Orthopedic Surgery* of Bradford and Lovett. The diagonal diameter from the left front side to the right back side is 0.250, and from the right front side to the left back side 0.235.

In a cast taken at the level of the tenth rib the spinous processes were found to deviate 0.014 to the left of the sterno-vertebral line. The ribs bulge backward on the right side. The transverse diameter is 0.113 on the left side (the side of deviation), and 0.090 on the right side. The antero-posterior diameter on the right side (the side of bulging) is 0.165, and on the other is 0.156. The diagonal diameter from the left front side to the right back side is 0.198, and the diagonal diameter from the right front side to the left back side 0.180.

CASE II was in a girl, seven years old, with a very slight dorsal curve, the greatest deviation being only 0.005. By Adams's test the curve was almost imperceptible, and only detected after two careful examinations. The cyrtometer was applied, and then placed on a table, when it was apparent that the spinous processes deviated to the right of the sterno-vertebral line and the ribs bulged backward. The apex of the right scapula was 0.016 above the left. One cast (Fig. 2) was taken at the level of the scapulæ, and shows the deviation of the spinous process, 0.022, to the right. The bulging backward of the ribs and the diagonal diameter of the right side being greater, 0.170, as compared with the diagonal diameter of the left side, which is

FIG 2.

0.155, prove that there is rotation. The transverse diameter of the right side is 0.079, and that of the left 0.015.

As it is important "that rotary lateral curvature should be looked for early in life,"[1] and as rotation occurs first, a diagnosis should be made before the spinous processes deviate to any perceptible degree. Case II shows that an early diagnosis can be made by this new method.

Adams says:[2]

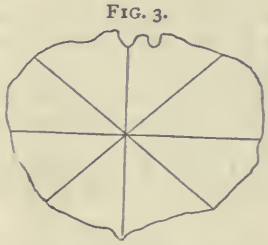
". . . . I wish particularly to impress upon you the fact that to rely upon the external examination of the spinous processes, *i. e.*, whether they are in a straight line, or present any lateral deviation, is a great practical error. . . . . The only certain and reliable indication of the existence of lateral curvature of the spine in the dorsal region is a prominence posteriorly of the angles of the ribs on one side, and a corresponding depression of the angles of the ribs on the other side."

[1] Loc. cit., p. 202.

[2] Ketch: The Present Status of the Treatment of Rotary Lateral Curvature, p. 9. 1888.

CASE III was also in a little girl, with a very slight curvature, but a bulging of the angles of the ribs on the right side. A cast (Fig. 3) taken at the level of the axillæ shows little, except the beginning of rotation, by the direction of the notches of the

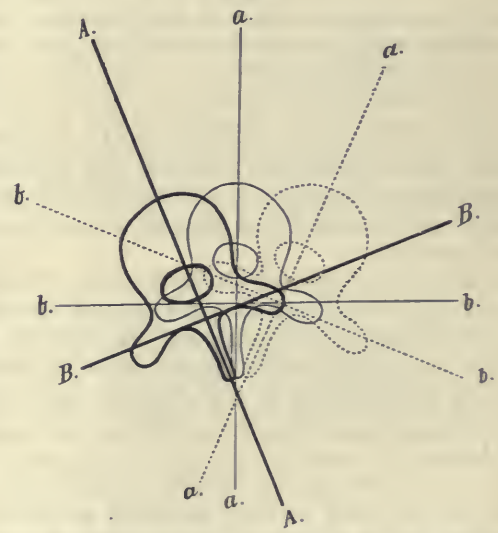
FIG. 3.



cyrtometer a little toward the right. This cast may be compared, therefore, with the well-known diagram of Adams.[1]

"The accompaning diagram is intended to illustrate the horizontal rotation movement of the bodies of the vertebræ taking place, so that they deviate to the extent of a quarter of a circle, whilst the apices of the spinous processes deviate laterally only to a slight extent. The thick transverse line *B. B.* represents the natural direction of the transverse processes of a dorsal vertebra in relation to the spinous process and body of the bone, through which the line *A. A.* passes in an

FIG. 4.



antero-posterior direction. These lines are, therefore, at right angles to each other, and represent the natural relations of the transverse to the spinous processes of the vertebræ. As rotation of the bodies of the vertebræ takes place, as indicated by the lines *a. a.*, the relations of the transverse processes become proportionably altered, and their direction changed, as indicated by the lines *b. b.*, till the extremities of the transverse processes on the convexity of the curve rise externally to the level of the apices of the spinous processes, as represented in the diagram."

A second cast was taken of Case III, at the level of the greatest deviation perceptible to the eye, *i. e.*, the eighth dorsal vertebra. This deviation

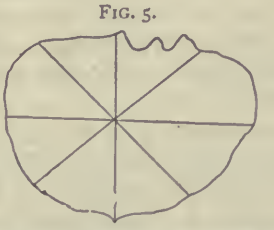
[1] Loc. cit., p. 86.

shows much better on the cast than on the patient. The sterno-vertebral line falls 0.026 to the left of the spinous process. The greater transverse and diagonal diameters of the right side, in addition to the bulging of the ribs, prove that the rotation is considerable.

CASE IV was in a boy, thirteen years old, who had empyema on the left side ten years ago. He still suffers from cough and pain in his back. He has a left dorsal and a right lumbar curve. The greatest deviation from the median line is 0.022, at the sixth dorsal vertebra.

A cast (Fig. 5) taken at the axillæ shows that the deviation of the spinous process is, to the left, 0.029.

FIG. 5.



It is very remarkable here that the diagonal diameters are the same. There seems to be a little bulging of the ribs on the side opposite to the deviation, as seen in several of the casts. The antero-posterior diameter is 0.145 on the right side, the side opposite to the deviation, and 0.140 on the left side. But in contrast with these two diameters, the transverse one on the side of the deviation is 0.114, and on the opposite side only 0.095.

This agrees with the observation in Dr. Putnam-Jacobi's case of empyema, in which the transverse diameter was enlarged, the antero-posterior diameter diminished on the affected side, after almost complete recovery.[1]

In my case, on the side of the deviation, the ribs do not bulge backward, and the general effect is that of collapse of the chest-wall. In other words, there is no rotation, but the spinal column is drawn over by the retraction of the affected lung, in the same way as the anterior and posterior chest-walls are drawn.

That cross-sections are valuable as aids to diagnosis, we may infer from the following quotations: "A cross-section shows an alteration of the diagonal axes of the spine. . . ." "The different halves of the thorax, on cross-section . . . ."[2] No method of taking cross-sections has, however, hitherto been suggested. In advanced cases, in which the diagnosis is easily made, this new method is not so valuable as in slight scoliosis; but here also a cursory glance at a cast will show us more in less time than a carefully written history. Individual variations from the ordinary type become conspicuous, and some circumstances, as the proportions of the diagonal diameters, are demonstrated when, without this cast method, they could only be inferred.

I desire to express my indebtedness to Drs. Shaffer and Ketch, for the permission kindly accorded me to examine patients at the Orthopedic Dispensary; to Dr. Annie Daniel, for similar facilities afforded me at the Wilson Industrial School; and to Dr. Mary Putnam-Jacobi, for the fundamental suggestion upon which this paper has been worked out.

[1] Mary Putnam-Jacobi: "Empyema," loc. cit.

[2] Bradford and Lovett: loc. cit., pp. 137–138.

ORIGINAL LECTURES.

COMPLICATIONS OF HERNIA.[1]

SERVICE OF DE FOREST WILLARD, M.D.,
SURGEON TO THE PRESBYTERIAN HOSPITAL, PHILADELPHIA.

[Reported by J. H. W. RHEIN, M.D.]

THE following cases illustrate some of the complications and varieties of hernia which constantly arise in ordinary practice. A simple condition of strangulation, without some peculiar accompanying difficulty, is the exception; hence the surgeon should be prepared for any emergency, and should act promptly, as the indications arise.

CASE I. *Nature's method of cure in strangulated hernia.*—Mrs. B., sixty years old, had for fifteen years noticed a small, painless swelling in the left groin, that remained stationary in size and did not disappear in the recumbent posture. It gave her no inconvenience, and she had been able to work until three months previously to the first examination, when she began to lose flesh and strength, and the tumor increased in size. Seven days previously to her seeking advice, a heavy step-ladder, in falling, struck the tumor, with resulting pain, heat, swelling, fluctuation, and in fact every evidence of suppuration. There was an absence of vomiting and abdominal pain, and the patient reported that she had had daily stools. The abdomen was soft and the general condition excellent. There were no areas of dulness about the tumor, and it could be moved from side to side without severe pain. The temperature was 98.3°.

As there was an absence of all symptoms of strangulation, it was deemed wise to await further developments. When I saw her six days later, in consultation with Dr. Adams, there had still been no vomiting, and there had been a passage from the bowels each day, but the tumor was discharging, from three or four openings, large quantities of pus and feces, and the whole right inguinal region was dense, hard, inflamed, and of a dark-purplish color. It was also crepitant under pressure. There was fever and mild delirium, and the woman's condition was extremely serious.

She was removed to the hospital, and free incisions were made in the tissues, which were found to be gangrenous. A large loop of intestine had sloughed, and this was carefully removed, while, at the same time, the utmost precautions were taken to avoid any disturbance of the adhesions in the canal and at the rings, in the hope of preventing the entrance of infectious material into the peritoneal cavity. The parts were washed

[1] Read before the Philadelphia Academy of Surgery.

freely with hot sublimate solution and mopped with carbolic acid, except in the region of the ring, where the adhesions were allowed to remain intact.

In spite of thorough drainage a number of small abscesses formed around the pubes, labia, and thigh. These were at once opened. The temperature at the time of the operation was 100.4°. Under stimulation and absolute rest the woman rapidly improved, but her mental condition remained serious, and it was afterward learned that she had always been peculiar and erratic. Two weeks later she attempted suicide.

Progress was uniform and continuous; the sloughs separated and the fecal fistula healed by granulation in about three months, stimulated only occasionally by iodin.

The only explanation of the total absence of symptoms of strangulation suggested is that, early in the course of sloughing a route of connection must have been established between the two portions of the intestine from which the loop had been separated, and that the feces passed through this avenue.

The points to be noticed in this case are: *a*. The absence of the ordinary signs of strangulation; *b*. The probable formation at an early date of a route between the upper and lower sections of the ruptured intestine; *c*. The effort of nature to remedy the evil; *d*. The unexpected recovery from what is usually a fatal condition; and *e*. The caution with which manipulation was practised about the neck of the sac; for had the finger or instrument disturbed the adhesions here, doubtless there would have been absorption of infectious matter and death from septic peritonitis.

Case II. *Congenital hydrocele; congenital hernia and varicocele, with operation and radical cure.*—A young man of twenty, of strong muscular and athletic habits, had always indulged excessively in out-of-door sports, games, etc. He had had a swelling in the left scrotum for years, he thought from birth, but it had given him no inconvenience until within the last few months, when it was noticed that the tumor increased in size, and after violent foot-ball games gave him some discomfort. When first seen, the discomfort had become constant, and was unrelieved by a suspensory bandage.

The scrotum upon the left side presented a small accumulation of serum in the tunica vaginalis testis. The enlargement in the upper part of the scrotum was formed by dilated veins and presented the characteristics of a varicocele. Intermingled with these veins, however, were several hard masses that seemed like a hydrocele of the cord. When the recumbent posture was assumed there was a diminution, but no positive reduction in the size of the tumor. There was no succussion on coughing. The size of the veins was increased by pressure placed external to the abdominal ring, but the size of the whole scrotal tumor remained unchanged.

The open method of operation for varicocele offered the safest and the best hopes of success, as the patient objected to wearing a suspensory bandage, and as the hardened masses alluded to appeared to intermingle with the veins.

After thoroughly shaving the parts and rendering them aseptic, an incision was made in the line of the cord; the veins were exposed and lifted away from the vas deferens. Upon reaching the central portion of the cord, the firm masses were discovered to consist of omentum, the peritoneal cavity communicating with the tunica vaginalis testis through the open canal, which had never been occluded. The loop of omentum had been permanently attached to the cord and carried as low as the testicle. There was no intestine in the sac.

The loop of omentum was accordingly ligated with silk close to the external ring; the sac was then surrounded with a chromicized catgut ligature, the two ends of which were then threaded upon a long, curved needle. The sac was then cut off and the needle was carried far up the canal and out through the abdominal wall opposite the internal ring, the ligature thus drawing the sac-wall back within the canal. The veins were ligated with catgut at points one and one-half inches apart, and the intervening parts were removed. Rubber drainage-tubes were inserted, and catgut drainage was also introduced in order to permit the early withdrawal of the drainage-tubes. The wound was only sutured at the inferior end, but sutures were also introduced between the pillars of the external ring.

The upper end of the wound was packed with iodoform-gauze, so as to induce healing by granulation.

The case pursued a very favorable course, the temperature on the first day being 102°; on the second day, 100°, and thereafter normal. There was little or no abdominal tenderness; the wound remained absolutely aseptic, and the drainage-tubes were removed on the second day.

The main point of interest in this case is the joint existence of a congenital hernia, a congenital hydrocele, and a varicocele. The cure was permanent when the man was last seen, one year after the operation.

Case III. *Hernia associated with sarcoma of testis; testicle removed; radical cure of hernia.*—The patient was a white male, forty-four years of age, married; for ten years he had had a right inguinal hernia, which descended into the scrotum, and for which he had worn a truss.

Three years ago a small lump appeared at the bottom of the right side of the scrotum, and increased slowly in size for two years, since which time it had remained stationary until a short time before the patient was first seen. It was ovoid in form, about the size of a large orange, solid but not particularly heavy, with a smooth, uniform surface, and was the seat of occasional shooting pain and tenderness upon pressure, the pain extending in the course of the cord.

The hernia was easily reducible, thereby altering the shape of the scrotal tumor, but not affecting the enlargement of the testicle. There was little or no fluid in the tunica vaginalis. The patient had lost flesh, but he was not emaciated, and, though pale, was not cachectic.

The testicle was removed through a long incision, the components of the cord being separately tied with chromicized catgut sutures. The hernial sac was laid open, and neither bowel nor omentum was adherent. The stump of the sac was thrust into the canal and was firmly sutured, as was also the external abdominal ring. Catgut drainage was used, and union was speedy and without complication.

To strengthen the hernial union, the patient was kept on his back for five weeks, after which he was permitted to go about with a truss.

Six months later, although he had had an attack of whooping-cough, the plug had not been forced out of the canal, nor was there any sign of hernia or recurrence of disease. There was no hardening along the line of the canal or in the inguinal fossa of the pelvis.

Centrally situated, however, with its greatest prominence directly at the umbilicus, was a dense, firm growth, absolutely fixed in position, movable only slightly from side to side, and apparently not adherent to the abdominal walls. It was very sensitive to pressure, and the man had lost strength and was much emaciated.

The patient died a year after the operation.

This undoubted sarcomatous growth was probably a secondary deposit in the mesentery.

CASE IV. *Strangulated hernia in an old woman; radical cure.*—Miss F., sixty-eight years of age, had a hernia of long standing, for which no truss had ever been worn. It became suddenly strangulated, and she had violent pain in the right groin, with vomiting.

The case was seen in consultation with Dr. O'Brien, who, when first consulted, discovered a small right femoral hernia, which he was unable to reduce. Applications of ice were ordered, but the directions were not strictly carried out. On the following two days attempts were made to reduce the hernia, with no better result. The pain was intense, and the vomited matter contained green mucus, bile, and feces.

Though advised on the second day, an operation was not consented to until the third day, at which time the patient was almost *in extremis*.

The tumor, which was of the size of an English walnut, and was dense and hard, had escaped from the internal femoral ring. There was no evidence that it contained irritating gases, and there was no fluctuation.

Herniotomy was immediately performed. The sac contained omentum chiefly, and a small loop of intestine, which, though black, when exposed for a few minutes gave evidence of returning circulation. The large portion of omentum acted as a shield to the intestine, and thus prevented it from becoming gangrenous.

The ring having been divided and the intestines replaced, the sac was dissected up, folded inward, and stitched to the fascia around the internal ring, thus forming a plug. Catgut drainage was used and the wound closed. A firm compress was first applied, then a large antiseptic dressing.

The temperature on the following day was 101°; pain and vomiting had ceased, and the patient had a natural stool in the afternoon. On the second day the temperature rose to 102°, but was easily reduced by quinine. The next day the temperature was 96°, and the patient was extremely weak and feeble. Under alcohol and nourishment the temperature rapidly became normal, and no more untoward symptoms followed, the wound healing by first intention.

Three weeks later the patient was up and about, wearing a truss, and the hernia has since shown no sign of return.

The interesting points in this case are the age of the patient and the dangerous condition at the time of operation.

CASE V. *Inguinal hernia; radical cure.*—A male, twenty-four years old, a year previously to the operation, was struck by a railroad brake in the left groin, with resulting swelling, which disappeared in two months; but any violent exercise caused pain in this region, which was relieved by pressure.

Four months later, after a high jump, a swelling appeared in the same locality, which has never been reduced. He had worn a truss with no benefit—in fact, the disability and pain were so great that he was unable to walk.

The tumor was doughy and firm, and the contents gave the elastic sensation of an epiplocele.

An operation was advised, and an incision was accordingly made in a line with the spermatic cord, beginning at the scrotum. The omentum in the sac was firmly adherent. This was ligated in sections and the redundant portion cut off. The stump was then inverted, fastened as near as possible to the internal abdominal ring, by carrying the ligature upon a long, curved needle up the canal and out through the abdominal walls. Sutures were also carried through the pillars of the external ring. The sac was ligated, cut through, and left *in situ*, as it seemed well vitalized; but it afterward sloughed away, and it was necessary to remove it, with the surrounding sloughing tissue. The edges of the wound were freshened and closed with catgut sutures, and the wound closed by granulation.

There has been no return of the hernia at the end of three years.

CASE VI. *Acute strangulated hernia complicated by hydrocele of the cord.*—A male, nineteen years old, after violent exercise, was seized with cramps, and when seen, in consultation with Dr. Rex, a few hours later, there were violent pain in the right groin, nausea, and vomiting. In the right inguinal region was a dense, hard tumor, which, with great difficulty, was reduced under ether, except a small mass, of the size of a pigeon's egg, which was situated at the external ring. When traction was made on the cord, the latter tumor would be drawn away from the ring, but it returned immediately to the original position when traction was discontinued. On the following morning the hernia had entirely disappeared and the smaller tumor had receded within the ring, consequently operative measures were deferred and a truss ordered.

The concurrent presence of hernia and hydrocele of the cord made the certainty of complete reduction at first difficult.

The following two cases show that though reduction may be easy, one cannot be sure that all difficulty has thereby been relieved.

CASE VII. Mrs. H. had for years a large inguinal hernia, the size of an orange, in her right labium. She was suddenly seized with pain and vomiting, which became on the second day stercoraceous. The tumor was easily reduced, but during the night the patient suddenly collapsed, and died. No necropsy was permitted.

CASE VIII.—*Perforation after reduction by taxis; death.*—A man, aged sixty, was brought to the hospital, after having been crushed by falling earth. A large right inguinal hernia was discovered, which was firm and dense, and tender to pressure. There was some slight vomiting and tenesmus.

The hernia was easily reduced by taxis, and no other injury was discovered.

The case progressed well until the afternoon of the second day, when the patient suddenly collapsed. His pulse became rapid; there was stercoraceous vomiting; and when seen a half hour later he was practically moribund.

As perforation was diagnosticated and the condition was desperate, an incision was immediately made in the line of the cord, and large amounts of fecal matter could be seen, but no intestine was found in the sac.

Median celiotomy was hastily performed, but the patient was so nearly dead at the commencement of the operation that he lived only a few minutes.

Subsequent search revealed large amounts of fecal matter in the abdominal cavity. The two open free ends of the bowel were found. The intestine had not been strangulated in the sac, but when reduced had been caught across a dense inflammatory band, which extended from the omentum to the abdominal wall, and had been cut through by the sharp, dense edge of this band. Extensive peritonitis existed.

Case IX. *Large, old hernia of left side, with strangulation in an undiscovered hernia on opposite side.*—The patient, Mrs. S., aged fifty, had a large, left inguinal hernia, with a small strangulated hernia of the opposite side, but this had never been noticed. She was suddenly seized with stercoraceous vomiting, and pain in the right inguinal region. Taxis readily reduced the left-sided hernia, but with the tumor on the right side this was unsuccessful; consequently herniotomy was performed, and a small loop of darkened intestine was discovered. This was returned to the abdomen, and the patient recovered.

Case X. *Herniotomy; collapse; recovery.*—Miss S. had symptoms of obstruction for four days previously to summoning assistance. On examination, a right femoral hernia was found to be strangulated; and, taxis failing, herniotomy was performed.

The falciform process was found so tight, and the mass so large, that the knife could be introduced only with difficulty. The intestine was discolored; but the natural color returning under the application of hot cloths, it was returned to the abdomen.

The following night the patient collapsed, the pulse became feeble and fluttering. Active stimulation was instituted by the attending physician, Dr. Skilling, and when seen by myself she had so far recovered as to warrant postponing celiotomy.

On the following day her condition had improved, and she made a perfect recovery.

This case shows that collapse is not necessarily due to perforation or sloughing of the intestine. If seen at the time of collapse, celiotomy would undoubtedly have been performed.

Case XI. *Median celiotomy for strangulated hernia.*—The following case is interesting, in connection with the suggestion of Tait, that old hernias should be operated upon through a median abdominal incision. In this operation, which was done in 1885, a diagnosis of concealed strangulated hernia was made.

The patient, J. C., sixty-five years old, had for two days complained of colic-like pains, which were not localized. There was no tenderness or swelling of the abdomen, but in the left inguinal region there was a small tumor, which the patient confessed had been present for some time, and which upon lying down diminished in size. It had never descended as low as the external ring. A concealed hernia was accordingly diagnosticated.

The finger was easily carried into the external ring and up the canal, but as the symptoms of strangulation were positive, and its location somewhat uncertain, median celiotomy was deemed justifiable—for thus, should the diagnosis of hernia have proved erroneous, any band of constriction could more easily have been discovered. The abdomen was very tympanitic, and the patient's condition indicated a high degree of peritonitis.

A small loop of intestine was found constricted at the internal ring, and was, with ease, removed by the index finger, but it slipped away from the grasp, and could not again be found. There was much delay in searching for the loop, in order to decide the question of its vitality. Most extensive peritonitis existed, and the patient seemed twice almost dead during the operation. As further delay would have been fatal, the part was washed out and the wound was closed, but thirty hours later the man died from peritonitis.

At the necropsy the intestine was found in good condition, except at the point of strangulation, where perforation had taken place, apparently a few hours before death.

The following case illustrates the carelessness and utter lack of knowledge that prevails in the application of trusses:

Case XII. A male, seventy years old, with a hernia of many years' standing, had been in the habit of buying his trusses solely with regard to economy of price, and without even consulting the truss-maker as to its application.

When first seen he complained of abdominal pain, and a large right-sided inguinal hernia was discovered, which extended into the scrotum. The truss pressed upon the neck of the sac, but chiefly upon the superior border of the pubis, while the hernia was always contained in the scrotum. Upon the left side there was also a small inguinal hernia.

The ring upon the right side was large, and it is undoubtedly for this reason that he escaped constriction at the neck from the ill-fitting truss, which, though useless, had done no injury.

He neglected my advice to have a truss properly adjusted; one day he was unable to reduce the hernia, and it became painful; it was not until the patient had been on his back for two hours, with ice upon the tumor, that taxis was successful.

GANGRENE OF THE GREAT TOE—SUBCORACOID DISLOCATION OF THE LEFT SHOULDER-JOINT—TUBERCULOSIS OF THE BLADDER.[1]

By JOHN B. HAMILTON, M.D., LL.D.,

PROFESSOR OF THE PRINCIPLES OF SURGERY AND CLINICAL SURGERY IN RUSH MEDICAL COLLEGE, CHICAGO.

GANGRENE OF THE GREAT TOE FROM OSTEO-MYELITIS.

The first case I bring before you this afternoon is one of gangrene of the great toe, originating, doubtless, in a

[1] Delivered March 4, 1893.

simple lack of nutrition from a local injury. The patient states that he received an injury fifteen years ago, but believes that this has nothing to do with the production of the gangrene, which has come on more recently. It is evidently not a true senile gangrene, or Pott's disease of the toe, as it is sometimes termed, because it is much slower in its progress, and it has been much more gradual. Examination of the urine shows that he is not suffering from diabetes, for you must remember we sometimes have diabetic gangrene, which is simply a failure of nutrition of certain parts, mainly the superficial extremities, due to the presence of a diabetic diathesis. The gangrene of this man's great toe is due to lack of nutrition in a very localized portion, as is easily seen from the fact that the remainder of the limb seems in pretty fair condition, and because there is only localized pain, and the circulation is good in the other toes.

True senile gangrene commences early, and is characterized by small black spots on one of the toes, generally the middle one; the inside shows a little black or bluish spot, and there is sharp pain in all cases. The pain increases, the black or bluish spot spreads, and pretty soon the foot itself becomes swollen, the discoloration extending upward upon the leg. After a considerable time—perhaps two or three weeks from the beginning, sometimes much more rapidly—there is formed a line of demarcation. In the meantime, there are certain constitutional disturbances manifested, such as are due to putrefactive changes in the part and the absorption of septic material from the seat of the gangrenous process. There is elevation of temperature, loss of appetite, inability to sleep, excessive irritability of the nervous system—all of these changes occur with senile gangrene—and, if the patient be not worn out by the nervous irritation which is present, there is finally fully established a line of demarcation, with sloughing, and separation of the dead from the living structures. But frequently the patient becomes worn out by this exhaustion, is poisoned by the septic process, and succumbs to the disease. That is the usual course of a true senile gangrene. In this foot there has been an entirely different history. The disease is more localized; he has had no constitutional disturbance, and has had comparatively little pain. The process seems to be a trophic one; and is doubtless due to the occlusion of certain bloodvessels that were necessary for the nutrition of the part. The deep-seated pain in the toe and metatarsal bone gives strongest evidence of osteo-myelitis.

The patient whose common femoral was tied at the last clinic is undergoing gangrene by an entirely different process, the gangrene in that case being acute. In the first place, we have had mummification or drying of the toes. That took place without discoloration, because the bloodvessel was never able after the operation to entirely nourish the parts. Every effort was made by the application of external heat to keep moisture and warmth in the parts, but without avail; so that we found that below a certain line the parts could not be nourished with the limited blood-supply, and I am now waiting for the formation of a line of demarcation. It is usually best to wait for a line of demarcation before amputating—not always so, but usually so. It would be always so if we could prevent septic infection, but every day that the patient remains exposed to the risk of sepsis—every hour, in fact, he adds to the dangers of the disease, and probably shortens his life to that extent. So then, in all cases of true senile gangrene, we should not wait for a line of demarcation, but proceed immediately to the operation.

Where should we operate in such a case? This is a point of considerable difficulty. If we could always find the exact point of occlusion of the artery we could amputate just there, and save all of the limb that would be properly nourished, and not cut off too much. But we cannot always do that, and so we must make the amputation usually where it would be safe. In the majority of cases of senile gangrene the obstruction is at the bifurcation of the popliteal artery; so, then, we must amputate at the knee-joint, or above it, in those cases, without waiting. I have seen several cases that proved fatal simply because the subject of disease positively refused operation until the member became so gangrenous as to be offensive to him, and when ready for operation he was already fatally septicemic. In these cases the danger is increased by the delay. In one case, I made an amputation just above the knee-joint, after carefully examining the knee, and, as I thought, with my fingers was able to map out pretty accurately where the circulation was still active in the limb. In that case I think the gangrene was produced by the pressure of a truss upon the femoral artery, whereby the artery was constricted and supplied less blood to the limb than it otherwise would have done. The patient recovered after the amputation without trouble. Fortunately, the knife, in making the incision through the popliteal artery, struck the clot which was there present, and which I pulled out with forceps before ligating the vessel. Had amputation been performed an inch or two lower, a second operation would have doubtless have been required.

To return to the case of the patient before you, we find the parts to be reasonably healthy in the vicinity of the gangrene, nothing but the toe being gangrenous; but in order to have plenty of material to cover the wound which will be made, it will be necessary to make the amputation at the middle of the metatarsal bone, and to exsect this if it shall be found diseased. For that purpose, I shall make an oval incision including the great toe at the base of the phalanx, and then continue a straight incision to the middle of the metatarsal bone, cutting the bone through in the middle, and then suturing the flaps of the resulting wound. In this manner we not only remove the joint which is deprived of nutrition, but prevent further infection by excising the infectious surface that would remain. It is hardly probable that this gangrene will spread to any considerable extent.

Having made an oval incision, with a straight one along the metatarsal bone, I shall now turn the flap up from the bone, which is held by an assistant. I find the tissue so indurated that this is easier said than done. With a heavy bone-cutting forceps I shall endeavor to cut the metatarsal bone, first freeing it a little more. I find the bone itself full of pus, from osteo-myelitis, so that I shall exsect it instead of making the section in its continuity, as originally intended. I find that the cuneiform bone is also involved.

I am now removing a portion of bone which is found in

the sheath of the tendon adjacent to the metatarsal bone. It is soft and spongy, and full of pus. This is really callus which was thrown out in the nature of an exostosis from the periosteum. It forms a thin shell which incases the metatarsal bone. In these operations, when there has been an old infecting wound, especially one of so long standing, it is necessary to cut away in the soft tissues every particle of infectious material which may there be present. I find in the sole, directly under what would be termed the "ball" of the great toe, speaking colloquially, a mass of granulation-tissue full of pus, which would certainly infect the flap to an extent that would prevent its healing if it were not removed. I shall therefore pick out every particle of that tissue with scissors and forceps, and perhaps finish with the curette; then wash it well with iodin solution precisely as would be done in a case of tuberculous abscess. In that way I shall hope to have an aseptic wound and to secure primary union even in so unfavorable a case. We can have no hope of primary union if we do not well scrape out all of the pus-forming granulation-tissue. The process may seem tedious to you, and doubtless is so, but a shorter time will be required in the reparative process. We will hold the wound open a little to allow the circulation to completely return, in order that we may have no concealed hemorrhage—an event that sometimes occurs, especially after the use of antiseptic solutions. The temporary application of an iodin solution, or of mercuric chlorid solution to one of these wounds results in a temporary closure of the blood-vessels, as it acts as a styptic. Many times the surgeon will suppose that all bleeding has ceased, that it is not likely to recur, but after he goes away the wound fills up with blood from some vessel not bleeding at the time the wound was closed, and he thus has all the dangers of hemorrhage, as well as the delay incident to the retardation of healing by the presence of a blood-clot forcing apart the wounded surfaces.

You will notice that for one side of the flap I have utilized the old wound. We must freshen that portion of the wound by cutting it out, so that healthy tissues alone will be brought in contact. It is therefore perfectly evident that this is not a typical amputation of the great toe and of the metatarsal bone. As a matter of fact, it is probable that the beautiful lines of incision that we see diagrammatically represented in the text-books are seldom followed in actual practice, especially by the conservative surgeon who desires to save as much tissue as is practicable. We are likely to utilize even ragged edges of wounds when it is advantageous to the future usefulness of the limb to do so.

The wound being so deep and the bone having been exsected, as it were, it will be necessary to provide for drainage. For that purpose I propose to put in a fresh strip of iodoform-gauze. You will see now that the wound is closed up, with the exception of the little opening where the iodoform-gauze is left for drainage; and where the hole of the former opening existed we have sacrificed scarcely any of the soft tissues of the foot. The diseased bone of the toe and the soft tissues covering the toe alone and a portion of the web being sacrificed, we may hope with reasonable expectation to have primary union, because all of the infected tissues have been thoroughly removed.

SUBCORACOID DISLOCATION OF THE LEFT SHOULDER-JOINT.

Here is a patient brought in with an injury of the left shoulder-joint. I have not previously examined him. We shall go through the usual steps of examination in these cases. The first thing you notice is the extreme prominence of the acromion. There is a flattening or absence of the head of the humerus from its normal situation, as compared with its fellow, which is pretty well rounded for a somewhat thin subject. We have here a marked deformity. Let us apply first what is known as Dugas's test, which consists in placing the elbow in front of the chest, with the hand on the opposite shoulder. I apply that test to the right side, which you see responds. It is, therefore, in place so far as this test is concerned. We perform the same operation with the left side, and we find at once that our efforts meet with resistance. We cannot bring the humerus to the median line; it is, therefore, displaced. Is the displacement pathologic, traumatic, or accidental? That, of course, the history of the case will determine. The patient, we are told, fell down stairs three weeks ago, and the shoulder-joint has been displaced ever since. What is the position of the head of the humerus? We shall try to ascertain. We notice a prominence anteriorly. On rotating the left elbow I find that prominence to be the head of the humerus. The humerus then is dislocated forward. Let us feel for the clavicle, which I find here pressing up from the sternal end of the acromion. I have now mapped out the clavicle, and I seek the coracoid process, which I find at the upper end of this tumor-like projection, anteriorly to the shoulder-joint, and, therefore, we have that wretched dislocation which we term subcoracoid. You remember that there are two forms of forward dislocation of the humerus, namely, the subclavicular and the subcoracoid, the subclavicular usually being a consecutive dislocation, while the subcoracoid is a primitive one.

The reduction of this dislocation, while effected sometimes with ease in a recent case, is always effected with extreme difficulty after a few days have elapsed, owing to the adhesions which have contracted the muscles, ligaments, and soft parts generally. Not only that, but the bloodvessels themselves have in these ancient dislocations become shortened because of adhesions contracted, and in our efforts at reduction we must always bear in mind the dangerous possibility of rupturing one of the axillary vessels. This displacement falls in the category of an ancient dislocation, and is to be regarded and treated as such.

Having located the dislocation, the first principle of treatment is to break up the adhesions that have formed. If the dislocation were a recent one we would apply Gunn's rule, but this is not capable of application now. As soon as the patient is fully under the influence of the anesthetic we make efforts at reduction in the manner described by Agnew, forcibly moving the bone in all directions, at the same time rotating the head of the humerus, if possible, using the forearm as a lever in order to break up the adhesions that have formed in the tissues of other joints. What is the obstacle to reduction in this dislocation? The untorn portion of the capsular ligament. What is the untorn portion

of the capsular ligament? Naturally the superior and posterior portions of the capsular ligaments remain untorn; so that we must place the limb in a position which theoretically will relax the ligaments; we thus draw the elbow upward and backward, which is the first position in which the bone must be placed. If there are still adhesions and contractions we must break them up. I now bring the arm to the side of the head, as in Smith's method.

Sometimes a long period of time is required for the reduction of these dislocations; at other times it seems almost impossible to do so without the introduction of the knife.

The case before us now does not come to the clinic for purposes of amusement, but simply because other physicians have tried for hours to reduce this dislocation, and failed to do so. He comes here because of the difficulty of reduction. I undertake to say, that of all dislocations of the humerus, the subcoracoid variety is the most difficult of reduction after a few days have elapsed. In recent cases there is comparatively little difficulty.

I am now simply trying to break up the adhesions which have formed about the head of this bone. There is snapping and cracking which may be felt with the finger, but it is false crepitus, due entirely to the breaking up of the adhesions. Sometimes hours are required before reduction is fully effected, and great patience is necessary. We have now measurably broken up the adhesions, and will endeavor to bring the bone into position. The first thing to do is to fix the shoulder-blade. This is done by a sheet passing about the shoulder under the body of the patient. Another sheet is placed over the top of the shoulder and under the body and intrusted to an assistant. It will be seen that, with the two folded sheets, the shoulder is firmly fixed. It now remains to fasten the humerus. I take a couple of gauze strips, such as you see, and folding them, lay them along the inner side of the biceps, and turn them upward as in a loop. These loops and the roller have been wet, so that they will shrink a little as they dry and become more firmly attached to the arm. The shoulder being fixed, with the humerus a little downward and upward, we carry the humerus directly upward toward the side of the head, making at the same time continuous extension. By the loop process we are not likely to do much injury to the skin. For the first time the head of the bone can be felt distinctly to give way from its luxated position. This shows how firmly it was bound down in its place. It is not yet restored to its normal position, and I do not know whether we shall be able to reduce it or not.

As I have already said, the subcoracoid dislocations are, of all, the most difficult to reduce. The position of the humerus, while improved, is not yet normal. The joint is now in place.

You see, now, I can apply Dugas's test, putting the elbow in front of the chest, while the hand is passed to the opposite shoulder. The difficulty is in retaining the humerus in position. For that purpose it will be dressed as if it were fractured, with the hand clasped upon the opposite shoulder. You can see at once that the prominence of the acromion is less, as the normal contour of the shoulder has been restored.

TUBERCULOSIS OF THE BLADDER.

This patient complains of extreme pain in the bladder and difficulty of micturition. He has brought a specimen of his urine for examination, which will be made at a convenient opportunity. He says the urine passed is rather scanty, but he has not, to his knowledge, passed any blood. The patient has constant pain in the penis. I will proceed at once to make an examination of the bladder and urethra for the purpose of completing the diagnosis. We already have certain diagnostic points, namely, that there is no hemorrhage, and that there is considerable pain. I find that there is no stricture of the urethra, as a bougie passes into the bladder with ease. On turning the instrument over in the bladder, so that the beak rests back of the prostate, I find a roughened posterior wall. I shall, therefore, have to use the sound to determine the cause of that if possible. I pass the sound into the bladder, and as there is some residual urine there, I will thus touch every portion of the bladder wall. I now pass it about. The sounder gives pain; but there is no foreign body in the bladder. If there were a stone we could hear the click; but there is only a distinct roughness of the posterior wall of the bladder, which is due either to tuberculosis or to an ulcerative process. As the patient has as yet passed no pus in the urine, it may safely be asserted that the tuberculous process is commencing. I shall now distend the bladder, so that we can detect differences, if any exist, between the rugous wall of the viscus and of any part that may be the seat of a new-growth or an ulcerative process. I now fill the bladder with water and thoroughly distend it, which enables a freer movement of the point of the instrument and the placing of a plug in it.

The points in diagnosis are clear: there are roughness of the posterior wall of the bladder and pain in the bladder, which has lasted intermittently for seven years. If there were a malignant growth it would a long time ago have filled the bladder and destroyed life. If there were an ulceration we would have the urine full of pus, and there would sometimes be hemorrhage; we should have violent pains and tenesmus, which are just commencing to come on. Such a disease can be but one thing, namely, tuberculosis of the bladder.

The future history of the case will be something like this: The symptoms that are present will gradually become more and more pronounced; after awhile there will be violent tenesmus or spasm, which will require an operation for its relief. We can relieve the spasm, when it occurs, by supra-pubic cystotomy. At the present time the most suitable treatment would be to use mild injections of iodized water (a solution of iodin in water) for the effect of direct contact with the tuberculous surface as soon as ulceration commences. Ulceration has not yet commenced. We now have a condition of thickening of the wall of the bladder.

Tuberculosis of the bladder is almost a uniformly fatal affection, chronic in its character, but of a nature not amenable to direct treatment. It may be palliated for a time by appropriate medication and regimen, and finally, when the spasm of the bladder becomes pronounced, we may be able to relieve it by making a supra-pubic incision, but that treatment is not curative. In addition to the local treatment, certain constitutional

remedies that from time immemorial have been found beneficial in tuberculosis generally should be used, such as cod-liver oil, guaiacol, various tonics, and alcoholic stimulants. All of these are more or less desirable in such cases. Notwithstanding the general contra-indications to the use of alcoholic stimulants in cases of cystitis, until ulceration is actually present there is doubtless no particular harm in the patient using enough alcohol to favor digestion and assimilation.

CLINICAL MEMORANDA.

NOTES ON ACUTE TONSILLITIS.

By SOLOMON SOLIS-COHEN, M.D.,
PROFESSOR OF CLINICAL MEDICINE AND APPLIED THERAPEUTICS IN THE PHILADELPHIA POLYCLINIC; ONE OF THE PHYSICIANS TO THE PHILADELPHIA HOSPITAL, ETC.

The facts that now and again I meet with references to an article upon "Acute Tonsillitis," contributed by me to The Medical News for August 11, 1883, and that further observation has somewhat modified, somewhat enlarged, the views there expressed, lead me to make a brief record of later experience.

I still believe that for therapeutic purposes the distinction between rheumatic and non-rheumatic cases is most important, the former requiring constitutional treatment, the latter being often amenable to topical treatment only. True, it is not always possible to make the distinction with certainty, and even when the results of therapy seem to justify the opinion that has been formed in a given case, the rigidity of a scientific demonstration is still lacking. Nevertheless, broad indications exist, the utility of which increases with one's experience.

Excluding from consideration those cases in which obvious endocarditis or pericarditis, or articular inflammation coexists with, or precedes, or follows, the manifestations of sore-throat, there is still a large number of cases that may be considered rheumatic, and in the recognition of which assistance may be found in some of the following data:

1. The personal or family history of the patient. Tonsillitis in one who has had rheumatism, frank or obscure, or in whose family there is a strong rheumatic or gouty tendency, is best treated as a manifestation of rheumatism.

2. A tendency to frequent recurrence of the affection.

3. The occurrence of symptoms, local or general, before any evidence of inflammation is visible upon inspection of the throat, and the tendency to partial or complete subsidence of nervous and febrile symptoms with the occurrence of local signs.

4. The coincidence with sore-throat of one or more of certain rheumatic or rheumatoid symptoms or signs, vague or pronounced, such as muscular soreness or tenderness; stiffness of the neck, or pain in swallowing, greater than can be accounted for by the visible extent of inflammation; pain in respiration or phonation (which, on laryngoscopic inspection, will usually be found to be due to involvement of the crico-arytenoid articulation or the tissues surrounding it); excessive pain in swallowing saliva, which may, indeed, be the first symptom noted, and may precede by many hours visible throat-lesion; pain in the precordium; a soft, blowing systolic apex, basic or vascular murmur, detected on careful auscultation, even in the absence of cardiac symptoms; pleural friction, which may be slight and limited.

5. The existence of any joint symptom, especially pain on motion, or stiffness; this may even be confined to a single small articulation, such as the base of the heel, or the joints of the big or little toe—the patient sometimes comparing the pain in the heel to that produced by jumping from a height.

6. Urinalysis; excessive acidity, excess of urates, and, in rare instances, albuminuria, pointing to a rheumatic origin of the affection.

7. The occurrence of anomalous eruptions. I have seen one case in which the exanthem somewhat resembled that of measles. The patient was a girl of some sixteen years of age, who had already had measles. Sometimes the eruption is petechial; sometimes erythematous; sometimes urticarious. There may be erythema at one point, petechiæ at another. Herpetic eruptions have a different significance.

The local treatment that I now advise in rheumatic cases is the use of a gargle, slightly modified from that of which the formula (not original with me) has been and is still being so widely copied from my communication to The Medical News previously referred to. It consists of four fluidrams of the ammoniated tincture of guaiac, shaken up with two fluidrams of compound tincture of cinchona and six fluidrams of refined honey, to which are slowly added two fluidounces of the concentrated infusion of coca, and enough water to complete the six ounces, in which are dissolved ninety grains of sodium salicylate. At intervals varying from a half-hour to two hours, a tablespoonful is used in divided portions as a gargle, and a portion of the gargle is swallowed, if deemed advisable. The same method may be employed in non-rheumatic or doubtful cases, concerning which, however, some additional remarks are to be made later. Previously to the gargling, in cases of so-called follicular tonsillitis, whether rheumatic or not, an application of a 10 per cent. solution of cocaine is made to the tonsil, and the plugs of sebum, desquamated epithelium, and bacteria removed with a scoop as far as practicable. If the inflammation is severe, or suppuration is evident, or apparently imminent, scarification or incision is practised.

In addition, heat is applied to the neck externally, and in cases attended with much infiltration of the submaxillary tissues, or with glandular involvement, inunctions of a 50 per cent. ointment of ichthyol are made.

In some cases pieces of ice allowed to melt in the mouth from time to time, and in other cases sips of hot water or hot milk, assist in the relief of pain. A useful expedient to mitigate odynphagia is, at the moment of glutition, to pull downward the lobe of the ear on the affected side; this diminishes the tension of the parts caused by the increase in size of the swollen tonsil.

In rheumatic cases, however, local treatment is of less importance than constitutional treatment; especially if the patient be seen early. In my former communication the use of sodium salicylate was advised. It constitutes good treatment and is usually efficacious. Since salol was introduced, however, I have fallen into the habit of prescribing it in preference to the sodium salt, as it is

less likely to be objected to, or to derange digestion. To an adult five grains of salol are given in powder every second hour, until tinnitus is produced, or thirty grains (the daily maximum) are taken, unless it should cause suppression of urine or symptoms of vesical or renal irritation, or the urine should become discolored. In the presence of any of these symptoms of carbolic-acid poisoning the salol is withheld, and sodium salicylate, oil of gaultheria, or cinchonidine salicylate is substituted.

In the treatment of anemic patients, and more especially of those who are subject to frequently-recurring attacks of articular rheumatism or of tonsillitis, the mixture of tincture of iron chlorid and sodium salicylate, to which I have given the name of *mistura ferro-salicylate* (in the House Pharmacopeias of the Philadelphia Polyclinic, Jefferson Medical College Hospital, and Philadelphia Hospital) is employed in preference. Of this two fluidrams (representing fifteen minims of the iron-tincture and fifteen grains of the salicylate) are given in water every second hour until tinnitus is caused, or relief is experienced, or until six doses have been taken, when it is intermitted or discontinued for the day. After one, two, or three days of treatment with salol or sodium salicylate or the combination of the latter with iron, cinchonidine salicylate in doses of five grains every second, third, or fourth hour is substituted and continued throughout convalescence. Often the last-named drug is given in doses of five grains, night and morning, for two or three weeks after recovery.

Patients not specially anemic, but subject to frequent recurrences of sore-throat, are treated with cinchonidine salicylate from the outset. In every case a full dose of some saline cathartic, usually Rochelle salts, is given previously to the administration of the specific remedy, and throughout the case the bowels are kept freely open, by drugs if necessary. A milk-diet is preferable; indeed the patient is rarely able to swallow solids.

In non-rheumatic cases, whether folliculous or herpetic, I am now accustomed to alternate the guaiac gargle, made with potassium chlorate or sodium salicylate or sodium borate, rarely sodium bicarbonate, with a spray or a gargle of a five-volume solution of hydrogen dioxid, sometimes rendered alkaline with sodium borate or bicarbonate. When there is much pain, the addition of cocaine (about 2 per cent.) to the spray is often quite grateful. When cocaine is used, however, the sodium salts are omitted; else the insoluble cocaine borate or cocaine carbonate would be formed. In the case of children who cannot gargle (though it is surprising how soon the little ones learn), it is directed that a little of the guaiac-mixture be swallowed slowly at such intervals as are practicable or judicious, and dependence is placed chiefly on sprays of the solution of hydrogen dioxid. As sore-throat of any description predisposes to diphtheric infection, a sponge on which, from time to time, a few drops of eucalyptol are placed is suspended from a tape loosely tied about the neck of the child.

Unless idiosyncrasy counterindicate, calomel is usually given internally in small or moderate doses, continued for about twelve hours; to a child of three or four years, one-eighth or one-quarter grain every second hour; to an adult two grains every fourth hour. This is of less importance, however, than the local treatment.

In cases of parenchymatous tonsillitis and peritonsillar abscess, scarification and incision are, of course, demanded. I have recently seen a case in which it became necessary to incise tonsillar, peritonsillar, and post-palatine abscesses on four occasions, and the duration of the case extended over four weeks, partly owing to the fact, no doubt, that the patient would not remain at home, but went to her work daily after the first forty-eight hours, when febrile symptoms had subsided.

In the case of a patient with much enlarged tonsils, who had for many years been subject to frequent attacks of tonsillitis, invariably proceeding to suppuration, the treatment here outlined was instituted in the first attack to which I was called, but failed to prevent the usual issue. At the inception of the next attack multiple punctures with the electric cautery-point were made throughout the substance of the affected gland. Reaction was not severe, and recovery from the disease and the treatment was complete in three days, without suppuration.

Special reference should be made to the tonsillitis of influenza. It was not uncommon in Philadelphia, even prior to 1889, to see cases of catarrhal fever in which the earliest manifestations were inflammation of the tonsil and neighboring structures. These cases usually did best when treated with cinchonidine salicylate. During the pandemic of 1889 and since, the special form of sore-throat described by Glasgow and by Seiler was quite common. In this the tonsil became swollen and red, sometimes covered with a grayish or pearlish exudation, often pellicular; and usually the palate and uvula were swollen and edematous-looking. The apparent edema, however, was of a peculiar type, puncture giving exit not to serum, but to a viscid lymph-like fluid, which formed long, coherent threads. Some of these cases are mistaken for diphtheria, and so reported. Constitutional treatment, especially the free use of sodium benzoate, is more useful than topical measures. Of the latter, a spray of the solution of hydrogen dioxid and cocaine, and inunctions of ichthyol seem most efficacious.

Herpetic tonsillitis derives a special importance from its liability to be mistaken for diphtheria. It is but rarely seen in the papular or vesicular stage, and when the vesicles have ruptured and the little ulcerations thus formed are covered with exudate the discrimination is often difficult and sometimes impossible. When the diagnosis has been made, palliative treatment only is necessary, the disease invariably tending to recovery. In cases of doubt the patient should be isolated and treated as for diphtheria.

In the diagnosis of herpetic tonsillitis, the coincidence of herpes labialis is considered an evidence of some value, though not pathognomonic. I have recently seen, however, a series of cases (two of them in one household: mother, aged forty-five years, and son, aged six years), in which extensive herpes of the lips and face was followed by intense pain in swallowing, referred to a "spot" on one tonsil—not, however, capable of detection by objective sign other than greater sensitiveness to pressure with a probe. There was neither papule nor vesicle, ulcer nor exudate to be seen during the whole duration of the affection, which varied from forty-eight hours to five days. In each of five cases the first "fever blister" appeared at the left angle of the lips; the left

tonsil was intensely reddened, though not swollen, while submental glandular enlargement was found just behind the maxillary symphysis. Recovery appeared to be spontaneous. In one case, however, that of a little colored girl, the glandular enlargement showed a tendency to extend, subsiding and disappearing after, if not because of, the application of ichthyol.

INTERESTING MANIFESTATIONS OF SYPHILIS IN THE EYE AND THROAT: ULCERS OF THE EPIGLOTTIS, STRABISMUS, AND PARALYSIS OF OCULAR MUSCLES.

By EDWARD F. PARKER, M.D.,
of Charleston, S. C.,
Demonstrator of Anatomy, and Assistant to Clinical Lecturer on Diseases of the Eye and Ear, Medical College of the State of South Carolina.

Manifestations of tertiary syphilis, as distinguished from those of primary and secondary syphilis, have two important characteristics: they usually attack the patient long after the primary inoculation, when the lapse of years seems to give promise of future immunity, and has lulled all anxieties to sleep; while they are also characterized by the destructive tendency of the lesions, which leads to extensive and rapid alteration of shape and to a corresponding interference with normal functional perfection.

The eye and throat, because, perhaps, they are more exposed, and in almost constant activity, are unusually common and popular sites for the exhibition of syphilitic symptoms.

On November 21, 1891, H. J., aged fifty years, was referred to me for throat-symptoms of an alarming nature. He had been suffering for some days with dyspnea and dysphagia, which had rapidly increased, until swallowing was almost impossible. Being unable to swallow, he had lost flesh rapidly, and his breathing was so labored and noisy that it could be heard at some distance.

On examining his throat a most peculiar condition was found, the whole pharynx being covered with numerous deep, circular cicatrices, with considerable loss of tissue. The laryngoscope showed the epiglottis to be much enlarged, and on its lingual surface was a deep, circular, jagged ulceration. The epiglottis was doubled on itself in so peculiar a way as to resemble two large tumors of the vocal bands. The laryngeal opening was thus constricted to such an extent that a space not more than one-quarter of an inch in diameter was left for respiration.

The swelling was intensely red, but easily distinguished from that of edema by its lack of transparency. The dysphagia and dyspnea had come on suddenly, and the condition of the parts below the epiglottis could not be determined.

The diagnosis of syphilitic laryngitis with ulceration was made and subsequently confirmed by the history. Fifteen years previously the man had had a chancre and bubo, with mild secondary symptoms. Since that time, though suffering from occasional attacks of sore-throat, he had been in perfect health. His wife had aborted three times.

So urgent were the symptoms that preparations were made for tracheotomy, should it become necessary. In the meantime the parts were daily sprayed with a solution of borax, and afterward with carbolic acid and glycerin, alternating with an application of silver nitrate (gr. xx to ℥j).

The general treatment given was mercury by inunction and large doses of potassium iodid.

The patient rapidly recovered as soon as the symptoms of ptyalism appeared, and a seemingly desperate case progressed quickly to recovery.

Another case, of a similar nature, presented on March 20, 1893. James G., aged thirty-three years, consulted me, complaining of difficulty in swallowing and dyspnea, which had come on rather suddenly. On March 17th his throat felt sore, and three days later he was unable to swallow solid food.

Laryngoscopic examination disclosed a thickened epiglottis, and just at the line of junction with the tongue was a large, deep, circular ulcer on the left side, which gradually grew larger. The swelling was characterized by a hyperemia of intense crimson color, not uniform, however. The man admitted having had a chancre and bubo with secondary eruption ten years previously, but had been in perfect health since that time until the present attack.

The treatment was the same as that detailed in the preceding case, and in a few days the swelling began to subside, the ulcer to heal, and recovery was rapid.

The foregoing cases are interesting, not as rare instances of syphilitic infection, but as showing all of the diagnostic points of syphilitic laryngitis. The lesions may sometimes be taken for the ulcers of laryngeal tuberculosis, or for malignant grows, but the diagnosis can usually be made by the laryngoscopic appearances alone.

The epiglottis is the most frequent site of ulceration in syphilis of the larynx, whereas in laryngeal tuberculosis the ary-epiglottic folds are first attacked and present characteristic tumefaction. Multiple ulcers occur in tuberculosis, while the single ulcer is the rule in syphilis.

The larynx in syphilis presents a most peculiar and almost pathognomonic redness, seldom seen in any other affection, while in tuberculosis of the larynx the opposite condition prevails; though the parts are swollen, they are unusually pale in color.

The syphilitic laryngeal ulcer is acute in development and accompanied with no pain, except on swallowing; it may even remain unnoticed by the patient until extensive changes, with subsequent contractions, have impaired the usefulness of the part. The ulcers of laryngeal tuberculosis are usually quite painful, are of slow growth, and are aggravated by cough, with a large amount of mucous secretion.

In the two cases reported there were single ulcers occurring on the lingual surface of the epiglottis; tuberculous ulceration usually involves the laryngeal surface.

Malignant ulcers of the larynx are generally the seat of great pain, the neighboring lymphatics enlarge, and the surface soon assumes a fungous character. They, too, are of slow growth, and are preceded by a tumor of varying size.

The peculiar features, then, of syphilitic ulceration of the larynx which would be sufficiently diagnostic, even in the absence of a definite injury, are: ulceration of the

lingual surface of the epiglottis, appearing suddenly and characterized by active hyperemia, causing a crimson, glassy look, and with little or no pain, except on swallowing.

The importance of getting the patient rapidly under the influence of anti-syphilitic remedies cannot be overestimated. The ulcers are likely to lead to great destruction of the parts, to adhesions and cicatricial contractions, which cause permanent and dangerous changes in delicately-constructed organs.

When the patient is able to swallow, the plan I pursue is to give hydrargyri chloridum mite, gr. j; pulvis ipecacuanhæ, gr. ½; pulvis opii, gr. ¼, three times a day, in conjunction with twenty drops of a saturated solution of potassium iodid, gradually increased to fifty or sixty drops. As soon as symptoms of ptyalism appear, the mercury is stopped and the iodid continued. If the patient is unable to swallow the pill, I practise inunction. By these means, at the end of three or four days the system is thoroughly anti-syphilized, and improvement is rapidly noted. Local treatment, by means of cleansing sprays and the application of stimulating caustics directly to the ulcer, is of great assistance in hastening the reparative process.

The following are two rather rare examples of syphilis of the eye:

Josh G., aged forty-six years, consulted me in February, 1893, for strabismus and failing vision. He had been confined to bed for some time previously with an attack of paralysis of the left arm and leg. The right eye was turned to the nasal side and almost fixed in this unnatural position by a paralysis of some of the ocular muscles. Vision was much impaired, but was not tested accurately, owing to the ignorance of the patient. The eye was movable to the left and downward, but immovable upward and to the right. The man denied any syphilitic history, but several stigmata were found upon his legs, which confirmed a diagnosis of probable gumma of the brain. Under treatment improvement set in, the movement of the eye becoming more natural, when the right side of the face became paralyzed. In consequence of this, a large corneal ulcer formed and gradually spread. The contents of the globe became purulent, and were discharged through the perforating ulcer; the globe was destroyed and the patient died soon afterward.

On March 1, 1893, George A., aged thirty years, was referred to me for strabismus convergens of both eyes. V.: R. E., 12/XX; L. E., 12/XL. There was an old leukoma in the left eye.

The man was a constant sufferer from severe headache, which was referred to the occipital region and confined him to bed at intervals. Tinnitus aurium existed to a depressing degree. No history of syphilis was obtained, nor were there any scars or cicatrices on the penis; yet upon his body stigmata betrayed the previous existence of the disease.

The man was put upon anti-syphilitic treatment, with the result that the strabismus was rapidly corrected, vision improved (R. E., 12/XII; L. E., 12/XXX), headache disappeared, and the tinnitus was much relieved.

Dr. Hyde, of Chicago, in an admirable article in THE MEDICAL NEWS, March 18, 1893, p. 281, calls attention to the importance of studying the ravages of former disease, as shown in scars or stigmata on various portions of the body. Those of syphilis are almost pathognomonic, and should always be looked for in obscure cases of disease. He also calls attention to a very important fact, namely, that these syphilitic stigmata are less frequently found on the penis than upon other less accessible regions of the body, and that failing to find them on this organ they should be sought for carefully elsewhere. These stigmata become, then, not only important links for diagnosis, but positive therapeutic indications.

A CASE OF PLACENTA PREVIA: WITH CONCLUSIONS.

BY CLARENCE KING, M.D.,
OF MACHIAS, N. Y.

PERHAPS nothing in obstetric work is so much feared by the general physician as placenta previa; and when he actually meets with a case of this kind he is usually struck with consternation, and likely to exaggerate his own inexpertness. Undoubtedly this grave apprehension of the medical attendant, with consequent inactivity, has much to do with the high mortality of this abnormal implantation of the placenta. Fortunately the placenta is previa only in rare cases, occurring in multiparæ only once in about five or six hundred pregnancies, and much less often in primiparæ. On account of the serious nature of placenta previa considerable attention has been devoted to it by authors and teachers, and, as a consequence, the death-rate has been somewhat reduced. But the nature of the abnormality and the indications for its treatment are not fully understood by many obstetricians and midwives, and it is, therefore, the duty of physicians to do what they can to disseminate a better understanding of this dangerous complication. I report herewith a case met with in my practice last summer, although it did not require active treatment, as labor came on and the hemorrhage ceased spontaneously.

Mrs. M. W., twenty-three years of age, was the mother of one child, which was delivered with forceps; there had been no abortions. About two weeks before the expected time for her second labor she was suddenly seized with severe flooding soon after going to bed. She denied positively all attempts at sexual intercourse. When I reached her, probably an hour after the beginning of the hemorrhage, I found her bed drenched with blood and a large-sized chamber vessel two-thirds full, most of which was stated to be also blood. The hemorrhage had nearly ceased, but the pulse was small, weak, and rapid; the surface cold and pale; the patient restless and anxious. I immediately took pillows from under her head, and began giving hot stimulants; also putting dry blankets under her, and applied hot bricks to her feet, limbs, and body. An examination *per vaginam* revealed the edge of the placenta in the os uteri. As I wished to change her to a dry bed, I thought it prudent to tampon the vagina, fearing that another copious hemorrhage, should it occur, might be fatal. After the patient had rallied somewhat she was placed in a dry bed, and her night-clothing changed. As slight labor-pains had begun they were encouraged by small and frequent doses of ergot, and I left my patient, through necessity,

for about four hours. Upon my return I found the pains much stronger, and I removed the tampon; I found the os dilated to the size of a silver dollar, and the head of the child presenting; there was no hemorrhage. I remained with her until labor was completed. The pain which completed the birth of the child's head also forced its body through the vulva, together with the placenta and membranes, and a large quantity of clotted blood and amniotic fluid colored red. The child was asphyxiated, and all efforts to resuscitate it were unavailing, although motion was perceptible until a late stage of the labor.

In the treatment of placenta previa the first requisite to success is good judgment on the part of the attendant, as at different stages and under different conditions he has to choose different methods. To summarize the modern treatment of placenta previa, as practised by our latest authorities, I would formulate the following rules:

1. Hemorrhages before the seventh month are likely not to be due to placenta previa, and call for delay, to allow, if possible, the child to reach a viable age. Such cases must be closely watched.

2. After the seventh month, if a single copious or repeated slight hemorrhages can be positively diagnosticated as due to a placenta previa, induce premature labor.

3. A single slight hemorrhage, if due to placenta previa, calls for absolute rest, preferably in bed under the constant care of a trained nurse.

4. All cases of profuse hemorrhage require the tampon or hydrostatic dilators to check hemorrhage until the os is dilated sufficiently to allow the introduction of two or more fingers into the womb, or until bleeding ceases from the pressure of the child.

5. When the indications point to the induction of labor Barnes's dilators should be used, the placenta having been previously separated and the edge reached on one side if possible; if the pains are then good and the head presenting, the case may be left to nature; otherwise version should be performed and a leg brought down to plug the uterine outlet.

6. When labor occurs spontaneously the Barnes dilator or tampon may be required to check hemorrhage, the indications then being the same as in the last case.

7. In shoulder-presentations, when the child is movable in the uterus, cephalic version may be performed by the external or combined method, and the case then left to nature, or the forceps may be applied.

8. In other cases of transverse presentation, after separating the placenta on one side and dilating the os, podalic version is indicated.

9. In cases in which podalic version is indicated it should be performed at the earliest possible time, one leg only being brought down and the case then left to nature.

10. Extra care should be taken with these cases to guard against post-partum hemorrhage, and strict measures employed to prevent septic infection.

Baron Albert Rothschild, it is announced, on the first anniversary of the death of his wife, who died of carcinoma, gave half a million florins ($210,000) for the establishment of a Carcinoma Hospital at Vienna.

MEDICAL PROGRESS.

Embolism Following Diphtheria.—Rooney (*Occidental Medical Times*, vol. vii, No. 4, p. 188) has reported the case of a girl of seven, living amid favorable hygienic conditions, who developed diphtheria three days after the death of a brother of eleven from the same disease, after an illness of five days. The illness was a severe one and attended with albuminuria, but on the twelfth day a tardy convalescence set in. Three days later, without premonition, the child uttered a gasping, smothered cry and appeared about to die. It clasped the precordium with both hands, gasped for breath, while the surface of the body was blanched and cold and covered with a profuse perspiration. Relief followed in a short time, but the child continued to complain of pain in the region of the umbilicus and of coldness and numbness of both legs. By the use of hot blankets and stimulants warmth and feeling were restored to the right leg and to the left to the level of the knee, below which point the limb was cold, bloodless, and shrunken. The action of the heart was rapid and regular, but weak. The temperature was slightly below the normal. There was complaint of intense pain in the toes of the left foot, and the leg was flexed upon the thigh and could not be extended on account of pain. A diagnosis of embolism of the left popliteal artery was made, and it was decided to await the formation of a line of demarcation. A bedsore formed; the child became greatly emaciated; and it was finally determined that amputation must be performed without further delay. It was feared that death would take place in the course of the operation, but the outcome was successful, recovery being ultimately perfect. On examination of the amputated member an embolus an inch and a quarter long was found lodged in the popliteal artery at its bifurcation into the anterior and posterior tibials.

The Indications for the Enucleation of an Eye are thus summarized by Jackson (*Philadelphia Polyclinic*, vol. ii, No. 4, p. 97):

1. The presence in the eye of a malignant new-growth, as glioma, sarcoma, or tuberculosis. This indication is imperative, no matter how much vision the eye retains.

2. The presence in the eye of a foreign body, with irido-cyclitis. If the injury be recent and the inflammatory process still active, and the patient cannot remain under observation, an eye with anything less than thoroughly useful vision should be sacrificed.

3. The presence of a foreign body in a blind eye.

4. Blindness with diminished tension of the eyeball, following perforation either from traumatism or corneal ulcer; most urgent after traumatic perforation of the exposed portion of the sclera.

5. Blindness from irido-choroiditis without perforation of the eyeball, if the patient cannot remain under observation.

6. Sympathetic inflammation, provided the exciting eye does not possess vision sufficiently good to be weighed against the chances of the sympathizing eye.

7. The actual presence of sympathetic irritation; not the risk of it, unless the patient is likely to be out of reach of surgical aid.

8. Persistent pain in a blind eye, sufficient to annoy its possessor or tempt him to the use of analgesic drugs.

9. Serious disfigurement of a blind eye, even if free from pain or risk of causing sympathetic disease.

The Protective Influence of Inoculation.—KLEIN (*British Medical Journal*, No. 1682, p, 632) has found that in guinea-pigs intra-peritoneal injection of definite quantities of bouillon suspensions of cultures of the cholera-bacillus, the vibrio of Finkler, the bacillus coli, the proteus vulgaris, the bacillus prodigiosus, and the bacillus of enteric fever from the surface of solidified nutrient agar, is followed by depression of temperature, motor weakness, and in a short time death. Post-mortem there are found evidences of sero-fibrinous peritonitis, with exudation into the small intestine. The microbes can be found both in the blood and in the peritoneal effusion. Similar results follow the injection of sterilized cultures in somewhat larger amounts. Non-fatal doses produce but a transitory illness. After recovery the animals are found to be refractory to otherwise fatal doses of any of the species. The conclusion is reached that all contain within their protoplasm the same poisonous principle. This is to be distinguished from the poisonous substances elaborated by the same microörganisms in nutritive media, including the animal body. Protected guinea-pigs resistant to intra-peritoneal injections of cultures from the surface of agar succumb to gelatin cultures attended with liquefaction. It is thus evident that an animal rendered refractory to the intra-cellular poison is not necessarily refractory to the specific toxins, or to the growth and multiplication of the bacilli and the production by them of their specific toxins in that refractory body.

THERAPEUTIC NOTES.

Amber Oil as a Rubefacient.—Oil of amber is a good remedy long since out of fashion. It is obtained by dry distillation of amber and purified by subsequent rectification. The crude oil is a thick, brown liquid, having a strong empyreumatic odor and a hot taste, whilst the rectified oil is colorless or yellowish, and has a specific gravity varying from 880 and 990. Amber oil is a powerful local irritant, and has been used with success in the treatment of rheumatism, lumbago, and sciatica; it is also used as a remedy for whooping-cough, rubbed well into the spine night and morning. A good liniment is made by mixing equal parts of oil of amber, spirit of camphor, and spirit of ammonia. Oil of amber is also employed as a local application to the chest in cases of incipient pulmonary tuberculosis and chronic bronchitis. It may be given internally in doses of from 10 to 20 drops, in emulsion or in capsules. It is useful in flatulent dyspepsia, in hysteria attended with globus, and in the treatment of hiccough. It is not free from toxic properties; a single dose of a tablespoonful has given rise to persistent vomiting and diarrhea, with symptoms of collapse.—MURRELL, *British Medical Journal*, No. 1683, p. 694.

The Therapeutic Influence of Subcutaneous Injections of Neutral Glycerin.—HALIPRÉ and TARIEL (*Semaine Médicale*, No. 12; *Wiener medicin. Presse*, xxxiv, 13, p. 499) treated a number of hemiplegics and tabetics by means of subcutaneous injections of neutral glycerin. They employed a solution consisting of one part of neutral glycerin and three parts of boiled water, to which was yet added half as much boiled water. The injections were given twice a week. A part of the observations were made upon persons that had previously been treated with injections after the method of Brown-Séquard. These included two cases of general hemiplegia, one of spastic paraplegia, and two of posterior spinal sclerosis. In the hemiplegics the contractures yielded; in the tabetics the gait improved and became more secure, the pains grew less marked, and in one case there was some return of sexual desire; in the case of paraplegia there was, in addition to the improvement in the spastic symptoms, relief of the constipation and a return of sexual desire. Subcutaneous injections of glycerin were employed alone in three hemiplegics and one tabetic. In the first there was increase in strength, general and intellectual improvement, and speech returned to the normal. In the case of the tabetic the pains diminished and the gait became more secure.

Calcium Chlorid for Pneumonia.—CROMBIE (*Practitioner*, No. 298, vol. I, No. IV, p. 263) recommends the employment of calcium chlorid in the treatment of lobar pneumonia. Of twenty-two cases of average severity treated with this drug, but one (and that in a child in which both lungs were involved) terminated fatally. From 5 to 15 grains were administered to adults every four hours. The cases ran a mild course and were characterized by the subsidence of the temperature almost to the normal after the lapse of two or three days of treatment (notwithstanding the continuance of the physical signs), and by an absence of the distress and danger associated with high temperature. In several of the cases the disease was arrested in the stage that it had reached at the time the treatment was instituted. In explanation of the action of calcium chlorid in the treatment of pneumonia it is suggested that the drug may neutralize the toxic action of peptones or albumoses circulating in the blood.

Quinine for Chorea.—Based upon the view that chorea probably depends upon a condition of depression or exhaustion of the motor and inhibitory functions of the spinal cord, together with the fact that quinine is a stimulant to the inhibitory function, WOOD (*Journal of Nervous and Mental Diseases*, N. S., vol. xviii, No. 4, p. 241) recommends this drug in the treatment of chorea. He found it serviceable in the small number of cases in which he had had the opportunity of using it, and in lower animals with choreic movements it acted with similarly good results.

For Membranous Enteritis.—

℞.—Salol.
Benzo-naphthol. } . . . āā 3ij.—M.
Sodii bicarbonatis }

Ft. cachet no. xxiv. Sig.—One after each meal.

A quart of a 10 or 20 per cent. solution of naphthol in warm water is also injected daily.

DUJARDIN-BEAUMETZ (*Journ. de Méd.*, No. 13.)

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EXPERT TESTIMONY.

THE lay public, and a considerable portion of the medical profession, have been much interested during the past month, in the course of the BUCHANAN trial in New York. The serious questions at issue, namely, the cold-blooded murder of a wife, or, on the other hand, the peril of a wrongly-accused man, have been practically set aside by the dramatic conflict of scientific witnesses. It would be unsafe to draw close conclusions when the testimony is seen only through the doubtful medium of the daily newspapers, but it seems evident that the experts for the prosecution were substantially overthrown, and there is no doubt that expert testimony has been discredited in the minds of many non-professional persons.

Apart from the interest that the BUCHANAN trial has as a conspicuous instance of the successful use of the "ptomaïnes" to combat the long-accepted methods of recognizing vegetable alkaloids, it has reawakened inquiry as to whether the methods of securing and presenting expert testimony may not be improved. The almost invariable tendency of those who seek to secure a better system is to some official selection of the expert by the authorities, judicial or executive, either for a term of years or for each case. It is assumed that experts so chosen will be unbiased and will represent the highest scientific attainments. It does not follow, however, that such excellent service would always be obtained. Even leaving out of consideration the difficulties arising from social and political influences (and the former are just as likely as the latter to promote the advancement of the unworthy), we must recognize that it is not always possible for the fairest-minded executive to select the most competent. Specialism has developed to such an extent that a man may be highly qualified to make one form of analysis and quite unsuited to another line of work.

Some of the interest taken in these questions doubtless arises from the hope that the selection of official experts would give a degree of impartiality to the work which would avoid the distressing contradictions now witnessed. There is, however, no likelihood that such result would be attained. Under the wise provisions of the Bill of Rights, the accused must be confronted by his opposing witnesses and has a right to witnesses in his favor. No trial could go on, therefore, without the opportunity for cross-examination and the contradiction, if necessary, of the official expert by opposing specialists. It is right that it should be so. Science is progressive, but scientists are not always equally so, and it is only by the open conflict of interested experts that the full light of truth can be thrown on the more obscure topics. The BUCHANAN trial, in fact, instead of leading us to doubt the correctness of the method in vogue, is a demonstration of the advantages of that method. Had the procedure been such that the prosecution's experts would have been beyond contradiction or even beyond cross-examination (for it has been seriously proposed by some that the scientific evidence should be presented in the form of a report and not in person), a grave error would have been made. For there can be no doubt that much scientific matter of great value has been made known by the defence's witnesses, and that a revision of the analytic processes for the detection of organic poisons is needed.

Under the most careful system, official experts will always lean to the prosecuting attorney's side. Even when appointed by powers above and practically beyond his influence, his advice will be often consulted, and shrewd lawyers soon learn the tendencies of men's minds, and select those experts who are likely to aid them in opinion as well as in data.

That, even with honest intentions, scientific witnesses may do injustice, is evident to all who follow judicial procedures. Some years ago, an analyst stated in evidence that a certain sample of milk was adulterated with annatto, and that this color is prepared in a very repulsive manner, being fermented with urine. Now, as a matter of fact, the annatto preparations sold to dairymen are unobjectionable, and there was no evidence to show that the particular milk had been colored by filthy materials, but the suspicion was allowed to go uncontradicted to the jury, because the defendant had no expert assistance.

RELATION OF ATMOSPHERIC ELECTRICITY, MAGNETIC STORMS, AND WEATHER-ELEMENTS TO TRAUMATIC NEURALGIA.

SOME of the readers of THE NEWS are no doubt familiar with the history of CAPTAIN CATLIN and the observations made by him at the solicitation of DR. S. WEIR MITCHELL. In 1864 CAPTAIN CATLIN lost a leg. Neuralgia followed, the pain being referred to the lost foot. By careful and extended observation it was found that the pain bore a definite relation to certain meteorologic conditions. These observations have been continued until now. Previous reports will be found in the *Transactions of the National Academy of Sciences* for 1877 and 1883. To these, CAPTAIN CATLIN has just added another contribution, for advance sheets of which we are indebted to the courtesy of DR. MITCHELL. In the ordinary or local manifestation of atmospheric electricity, as in thunder-storms, he was unable to find any relation with neuralgia, nor was it clear that the undetermined fluctuating values of atmospheric electricity attending cyclones have an influence in this connection. It is not, however, unusual to witness, after severe thunder-storms accompanying cyclone movements, the phenomenon of so-called "heat-lightning" as an apparent product of the storm, and this it is believed may terminate in the true auroral display, or a magnetic storm, and becomes in this form, if sufficiently intense, a contributor to the pain-condition. The temperature-curve, the hours-of-sunshine curve, and, to some extent, the elastic-force-of-aqueous-vapor curve, which bears nearly an inverse relation to relative humidity, are large in their negative values and operate to diminish pain, while all of the others, excepting wind, but including the number of storms, increase the amount of pain.

Two subjective conditions were noted in connection with attacks of pain. The first one to attract attention was a tendency to sleep preceding the attack, which manifested itself even when the onset of pain was in the morning. It seemed to have a functional intimacy with the pain, and was noted early in the history of the case, more than twenty years ago. The other condition is the effect of eating, which emphasizes a case already on, and may prematurely develop an attack which otherwise would have been delayed several hours.

In the daily pain-curve there are three principal maxima, the first at 11 A.M., the second at 2 P.M., and the third at 7 P.M., with two subordinate ones at 9 A.M. and 4 P.M. Eating may possibly have had something to do with the rise at 9 A.M., 2 P.M., and 7 P.M., but seems to bear no relation to the 11 A.M. maximum with a subordinate minimum at 10 A.M. intervening between it and the 9 A.M.

The part of the curve at 6, 7, and 8 A.M. has almost an inverse counterpart in 8, 9, and 10 P.M.; but to take the curve from 9 A.M. to 7 P.M., inclusive, there is one important minimum at 12 and 1 P.M., then a subordinate minimum at 3 P.M., very like the 10 A.M., followed at 5 and 6 P.M. by a distinctly marked minimum.

In all the various aspects of treatment of this case, weather was found to be a factor more or less potent in the annual comparisons; in the semi-annual, quarterly, and monthly, in the "spells" belonging to any "type," and in the diurnal, there was a correlation between pain and weather; and it is probable that in the decennial periods, if such shall be demonstrated to exist, a corresponding response would be found.

It was observed as a general law that maximum pain bears a direct proportion to storm-frequency, and an inverse proportion to temperature and elastic force of vapor, and minimum pain bears an inverse proportion to storm-frequency and a direct relation to temperature and elastic force of vapor; while depth of rain, etc., go along with number of storms and maximum pain.

In this connection it becomes evident that meteorologic charts of relative storm-frequency would be of service to the neuralgic subject in selecting a habitation.

In the annual changes of weather, from January to July and from July to January, and, indeed, in regard to movement of storms in general, the law of mean change is uniform, but if the mean is differ-

entiated a departure from the law of uniformity can be detected in any one year by an injection here and there of an abnormal break which may last from one to three weeks. These breaks are more likely to occur in late fall or early spring, but may happen any time, and are known as "spells," and may be associated with the cold or warm "types of" weather, or, indeed, with any unusual condition probably brought about by the changing shapes and relative position of the great anticyclone areas. Early in the history of Captain Catlin's case the pain, both in amount and intensity, became associated with these "spells," the intenser forms of pain occurring at the beginning of the "spells." So also when a uniform condition of weather prevails, as in period of drought, a diminution of pain obtains.

It was further found that, while the absolute values of the rain-depths and number of storms at the hours of greatest pain do not show a full correspondence, there is a relative value between the storm and rain curves and the pain, and a parallelism of the two with the latter.

THE TREATMENT OF MALIGNANT NEW-FORMATIONS.

As time goes on and as our knowledge of disease-processes and disease-causes enlarges, the list of diseases susceptible of successful medicinal treatment grows progressively. Who can study the pages of history and not be startled at the large number of lives that have been sacrificed to diseases that to day we know to be perfectly controllable and in many instances curable. Perhaps the most conspicuous of these are syphilis, malaria, and tuberculosis. Of the first and second the prognosis, in the practice of intelligent physicians, is almost invariably favorable; while that of the third is by no means so hopeless as, but a few years ago, it was supposed to be.

There is still one affection—or, more accurately, a group of affections—that we have not yet learned to look upon as other than mortal; but even with regard to these a great step in advance has been made. Not so many years ago it was generally (and perhaps it is to-day yet, by some) held that the so-called "malignant" neoplasms, and particularly the atypical epithelial new-growths or carcinomata, were constitutionally primary, and irremediable. The error of this dictum has been irrefutably demonstrated by the results of modern surgery; for it has been shown by trustworthy observations, extending in some cases over many years, that the timely removal of a malignant neoplasm, together with all infected surrounding tissues and the anatomically related lymphatic glands, has been followed by a freedom from recurrence and the preservation of life.

Of the surgeon's knife, it will be willingly granted that it has accomplished more in the treatment of malignant neoplastic disease than have all other therapeutic agencies. There are, however, certain conditions in which the knife is not available, whether it be from involvement of vital structures, from inaccessibility of the growth, from great extent of involvement, or other efficient reason. Under these circumstances—as a matter of fact, independently of these circumstances—it would be a great boon if we possessed some measure of treatment holding out reasonable hope of success or even of amelioration. Many drugs and many agencies, scientific, rational, empiric, and otherwise, have been employed with this end in view, and but one, of all, has afforded the slightest encouragement. That one is arsenic in some form or another, applied topically, injected subcutaneously, or administered internally. In a communication recently presented to the Medical Society of the State of New York, Wight (*Annals of Surgery*, vol. xvii, No. 4, p. 383 *et seq.*) makes an interesting contribution to this subject. He has conjoined the internal administration of drugs with operative procedures.

The employment of mercuric chlorid, of iron iodid, and of tincture of ferric chlorid was unattended with benefit. A combination of arsenic iodid (gr. $\frac{1}{24}$), potassium iodid (gr. v), syrup of iron iodid (m x), and tincture of calumba (f ʒj), seemed to do good. The same conclusion was arrived at as to the administration, both in cases operated upon and in cases in which operation was not permissible, of prepared chalk (gr. v to gr. x) in tincture of calumba (f ʒj), before meals, and arsenic bromid (gr. $\frac{1}{10}$ to gr. $\frac{1}{10}$), after meals. These findings are in entire accord with common experience.

In some cases of cutaneous carcinoma the judicious employment of escharotics, as Lewis (*Annals of Surgery*, xvii, 4, p. 392 *et seq.*) points out, possesses obvious advantages and has a distinct field of usefulness. For small warty growths the application of a paste composed of potassic hydrate, 12 parts, cocaine hydrochlorate and vaselin, each 6

parts, is serviceable. The escharotic action is to be limited by means of acetic acid. In cases of rodent ulcer a paste of lactic acid and silicic acid may be employed in the destruction of the diseased surface. This application, while not very active, possesses the advantage of innocuousness. Cutaneous carcinomata of small extent may be treated by means of a paste composed of arsenious acid, 2 parts, and mucilage of acacia, 1 part. This is applied to successive areas of one square inch and covered with absorbent cotton, which is left in place until signs of inflammatory reaction appear, when warm poultices are applied until the slough separates. Another paste contains half a grain of mercuric chlorid, one grain of arsenious acid, five grains of mercuric sulfid, five grains of ammonium chlorid, a dram of starch, and a dram of wheaten flour, which are separately ground and reduced to fine powder. They are then rubbed up in a mortar, a half-ounce of a saturated solution of zinc chlorid being meanwhile slowly added. To insure prompt and effective action the epidermis must have been removed by means of potassic hydrate.

EDITORIAL COMMENTS.

Newspaper Reports as to Deaths from Ether.—Few misfortunes are more distressing to a surgeon than the death of a patient on the operating-table. Notwithstanding every precaution, this will sometimes happen, from circumstances not to be foreseen or controlled. It has taken place in the practice of some of the most eminent, skilful, and careful men that ever held a knife. When the patient is well-known in the community, such a mishap becomes widely reported, and is likely to be damaging to the reputation of the surgeon, even although his fellow-practitioners are fully aware, and freely testify, that he cannot in any way be held responsible for the unfortunate result.

In the case of the late Col. Shepard, the attendants were men of deservedly high reputation, and there is absolutely no blame whatever to be attached to them. From the reports published in the newspapers, it would seem that the cause assigned for the death was edema of the lungs. In the absence of evidence of this from an autopsy, we should be inclined rather to suspect some lesion of the cerebral respiratory centers, either occurring primarily as the effect of the ether-inhalation, or previously existing, and only aggravated thereby. But whatever may have been the pathologic condition, we see no evidence of want of care or of skill in the management of the case.

Such, we think, will be the unanimous verdict of the profession. It is, therefore, with indignation that we find the following paragraph going the rounds of the newspapers:

"Dwight A. Lawrence, the New York politician, has recently undergone an operation similar to the one the doctors tried to perform on Colonel Shepard. 'I was quite nervous about the operation,' he said. 'Colonel Shepard was in my mind, as his case occurred a week before the time set for mine. However, I resolved to stick it out. I went through the ordeal all right, and now feel like a new man. I am satisfied that if Colonel Shepard had had more careful treatment he would be alive to-day.'"

To the lay mind, this oracular statement of a layman may have weight, to the prejudice of those who had charge of Col. Shepard's case. Very possibly no such remark was ever made; it may have emanated from the fertile brain of a reporter. Yet there it is, published; and we feel bound to protest against such a gratuitous reflection upon the professional conduct of our brethren. We do not know whether under the law of libel they would have any chance of redress by legal process. The damage sustained by them would be difficult to estimate, and no doubt there would be plenty of technicalities under cover of which the slanderer would escape responsibility. But we think the medical press and profession should extend their moral support and their sympathy to Dr. McBurney and his associates.

Bureau of Medicine and Surgery of the Navy.—There are a number of departments or adjuncts to the medical profession that have peculiar opportunities for aiding in medical progress. The medical officers of insurance companies, for example, have exceptional data at their disposal that, if properly collated and worked out, would be of the greatest benefit to science. Another such department is the Governmental Bureau of Medicine and Surgery of the Navy. The contributions of this department to general medical science might be made most noteworthy if they were encouraged, and if the Bureau turned its attention to the questions of epidemiology, meteorology, the geographic distribution of disease, etc.

Early in May the appointment of a Surgeon-General and Chief of the Bureau of Medicine and Surgery of the Navy Department will be made by the President. As the duties of this office are entirely administrative, it is to be regretted that four years is the limit of service, unless the incumbent be reappointed. Although much can be accomplished in one term of office, still it is hardly time enough to inaugurate and carry out successfully a line of reform and progress that seem to be required in this department of the Navy. Some officer should be selected for this position who has an established professional reputation both in and out of the service, who possesses the required executive ability for the office, interest in general medicine, etc. He should devote four years of intelligent, earnest work in doing something more than merely carrying on a bureau routine.

We are of the opinion that a well-organized medical corps in any department of medicine should have a head which could, and would, direct scientific research in the most useful channel, not only for its own advancement, but for the benefit of the profession at large. The older members of the profession will recollect what valuable results to science followed upon the deductions made by meteorologists from the records of weather phenomena kept by officers of the medical department of the Army for many years just previously to the War of the Rebellion.

This is only a hint of the work that may be done by

an invigorated department, and we trust an officer may be put in charge of it who will inspire his subordinates to utilize the opportunities offered them in their varied residence about the world.

"The New Woy" is a new journal, a fresh evidence of American journalopathy and of much more besides—another organ of "Orificial Philosophy." It is noteworthy that English grammar and orthography are equal to the emergency, and are on a par with the "philosophy." Capillaries, *e. g.*, is always spelled *cappillaries* by the LL.D. contributor and the M.D. editor. Dr. Young is editor, and chief among the advertisement olla podrida that constitutes the pronounced feature of the publication is editorial praise of the editorial "dilators." "Dr. Young's rectal dilators seems (*sic!*) to create a demand (*sic!*) for an article long desired by the medical profession, if the number of orders received for it (*sic!*) indicate (*sic!*) anything. . . . ." We particularly note the power of rectal dilatation to cure insanity, as we are assured that at least "three-fourths of all the howling maniacs" of the world may be wholly cured "in a few weeks' time by the application of orificial methods." Why, then, in the name of pity and of kindness, do these men not apply the dilators each to himself or to each other?

We very much fear all this imbecility may rest upon a semi-pathologic basis, and that Krafft-Ebing may have a new chapter to write concerning sodomic perversion in his work upon sexual psychopathy.

Taxation of Secret Proprietary Preparations.—We noted last week the introduction of bills in the New York Legislature to restrict or forbid the sale of patent medicines. While all good physicians and good citizens are convinced of the perniciousness of the custom of free sale of secret proprietary preparations, it seems doubtful if public sentiment has yet reached the point of passing such laws, or, if passed, of making the laws effective. In the meantime would it not be possible to secure the passage of laws imposing stiff taxes on "the goods" of these fellows who thus trade in the health and upon the ignorance of their dupes? The position of the government is now one of protection to them, instead of one of repression or discouragement. The tremendous amounts of money invested in the manufacture, and the princely fortunes made by the manufacturers, show that a sharp tax could be easily borne. Other governments do impose such a tax, and why should we not do so? The knavery of secrecy is proof itself that the traffic should be made to return to the community some of the ill-gotten gains, and the plan is further justified on the ground of partial reparation for the injury done the community by unrestricted sale. The medical profession should by collective and society action stamp its denunciation upon the disgrace and work for its repression.

Christian Science Dupers and Dupes.—In 1889 a certain A. Bently Worthington, of New York, alias Crawford, and with eight or ten other aliases, was exposed as a bigamist eight times over. He was one of the finest rascals the criminal courts have had to deal with, and he was quite as notorious as a high priest and semi-divinity of the Christian scientists. A Mrs. Plunkett was the high priestess of the cult and editor of *The International Magazine of Christian Science*. Husband Plunkett gave up his wife to what Artemus Ward would have called Mrs. Plunkett's "affinity," and the "handsome and attractive" Worthington and the lady were "married" according to the peculiar non-ritual, non-ceremonial type of "wedding" advocated by those of the faith. The precious pair were finally "run out" of the United States, and disappeared, until now comes a wail from New Zealand, where the couple have gulled the New Zealand faith-curers out of some sixty thousand dollars and made marriage vows of no sacredness—but have "cured" many diseases beyond the power of ordinary medical men.

The Infectiousness of Tuberculosis.—It is related by the Paris correspondent of the *British Medical Journal*, No. 1684, p. 769, that of a healthy family of nine living in a house occupied ten years previously by two tuberculous persons, three members manifested symptoms of tuberculosis after having slept in the bedroom used by the previous occupants. On examination, tubercle-baciili were found in the paper removed from the ceiling and walls of the room. It is to be assumed that the former occupants had been uncleanly in their habits, that the sputa had dried on the walls, and that the bacilli had retained their vitality.

Quarantine at Hamburg.—We wish to call especial attention to the letter copied from the *British Medical Journal*, published elsewhere in our columns. The plan seems an excellent one to generate disease of any and all kinds among the wretched emigrants and to dump upon us the products of this pathogenic cupidity. Both at Hamburg and at New York our officers of quarantine should be doubly alert and careful.

Cholera-bulletins.—In view of the obvious fact, that incalculable and avoidable harm may result from the suppression or concealment of information concerning cholera, the *British Medical Journal* recommends that an international agreement be made, whereby each country shall pledge itself to publish frequent and complete bulletins as to cholera-prevalence. Towns and nations would suffer far less inconvenience from quarantine and like restrictions, if it could be taken for granted that all of the facts were immediately made public.

Pneumonectomy.—The apex of a lung to which a tuberculous process was limited was recently successfully removed in England. The anterior third of the second and third ribs was excised; the parietal pleura was opened; the diseased apex was freed of adhesions, pulled out and transfixed with a needle and strong silk; the ligatures were secured and the apex removed. Pneumothorax developed, but occasioned little disturbance. The wound was quite healed at the end of the third week.

Cholera at the Eleventh International Medical Congress.—At the request of the Indian Government, the Organizing Committee of the Eleventh International Medical Congress, to be held at Rome in September, has decided to have a Section to be devoted to the consideration of the

subject of cholera, to discuss its origin, the means of arresting its diffusion, and its treatment.

A Hospital for Tuberculous Patients of Paris.—The Municipal Council of Paris has decided to secure a site in Augicourt, in the Oise department, for the erection of a capacious hospital for tuberculous patients, which is intended to be a chapel of ease, to relieve the hospitals of Paris of the excess of cases of chronic pulmonary tuberculosis.

Homeopathy in Germany.—At a recent sitting of the Prussian House of Lords a request was made for the establishment of a Chair of Homeopathy in one of the German universities, but the Cultus-Minister declined even to entertain the proposal.

Bacteriology in India.—The Government of India has decided to establish a laboratory of hygiene at Simla, at the head of which Prof. Hankin, the distinguished bacteriologist, is likely to be placed.

SELECTIONS.

FIN-DE-SIÈCLE QUARANTINE.

MANY readers, it may be assumed, are not yet aware that amongst the several consequences of the last cholera-epidemic in Germany, one still survives in full activity, namely, the quarantine in Hamburg. It is not a quarantine for passengers or goods coming to Hamburg from abroad, but quite the reverse; it is passengers going abroad who are kept in quarantine before leaving Hamburg. Only people coming from Russia and travelling through Germany, in order to embark in Hamburg for America, are subjected to a quarantine of six days' duration, after which they are taken directly to the outgoing steamer. This measure was called forth first by the stringent regulations to prevent the introduction of cholera from Europe into the United States; secondly, by the desire of the Hamburg shipowners and companies not to let the lucrative "emigration business," which they had almost monopolized, slip out of their hands. Being itself for a long time the only infected place, and the source of cholera, Hamburg was in great danger of losing the export of these "living goods." The matter was one which required skilful management, and recourse was accordingly had to a preventive quarantine. It is, of course, much more convenient to keep the passengers in quarantine six days on land than on board ship, because, while the latter is expensive for the companies, the expense of the former falls only on the passengers. There is, of course, nothing to be said against the quarantine itself, so long as America insists in her demands, and Hamburg takes the trouble to comply with them. But the manner in which the quarantine is at present carried out in Hamburg deserves that public attention should be directed to it.

The number of persons kept in the quarantine barracks of Hamburg is between 1000 and 2000. Immediately after the arrival of a train carrying emigrants, the latter are escorted by the police to the barracks. The chief business the emigrants have in Hamburg is the purchase of a ticket to America, and that is bought for them by the police, whose duty it also is to ship them off to America at the proper time. As, however, there are not always steamers enough to carry all the passengers, many of them are detained for ten days, a fortnight, or even longer, waiting for the police to send them away. Thus the police are practically the masters of the situation—and of the emigrants. The barracks in which the poor quarantined emigrants are imprisoned consist mainly of three separate buildings in one large court. One of them serves as a dormitory, the second as a dining-room, and the third as the kitchen.

The dormitory is divided into several compartments, each of which is fitted with bedsteads, the bedsteads being divided into four berths, two above and two below. There is no other furniture in the dormitory. The floors are not washed or cleansed at all, and as the court is not paved and all washing is done in the court, all the mud, and dirt, and slush is brought straight into the sleeping and dining rooms. Each bed is furnished with a mattress, a straw cushion, and a dirty coverlet, and no other bedclothes whatever. The emigrants have to take their baggage into their beds, and as they seldom undress themselves properly, or take their boots off, it is easy to imagine what the exterior of the beds is like. To obtain one of these beds the poor emigrants have to struggle for it, as there are often not enough of them for all the people who are dragged into the barracks. After having passed the night in such a miserable berth, they crowd in masses out of the rooms; but the only place they can go to is the dirty, wet court, where a large cask, filled from the pump, serves as a common washing-basin. It is emptied in the most simple way—that is, by turning it over. Then begins another misery, the feeding in the dining-hall.

At breakfast-time (8.30 A.M.) everybody receives two small loaves (*Semmel*) and some tea. It is a curious sight to see the whole crowd standing and waiting to be admitted to the eating-room. They are admitted into the room only through one door, one by one—mothers with their babes in their arms, old and young people, all thronging and crushing each other to get in sooner. So great is the crush that some faint from want of strength or exhaustion. No one, however, can leave the dining-room before all have received and finished their poor meal; the air and smell in the meantime getting worse and worse, as the crowd inside becomes more dense. Thus those whom hunger has driven in amongst the first at 8.45 A.M. cannot get out before 10.30 or 11 A.M. The tea is given out in small tin basins, which serve afterward at dinner-time as soup plates. This disgusting scene is repeated at dinner, which consists of soup and some meat, and at supper, which is the same as the breakfast. The time between these meals is spent in loitering about in the case of those who have only been a few days there, and in the case of over-time prisoners in anxious efforts to obtain release from their incarceration. These efforts consist mainly in getting an audience with the all-powerful police officer, who, to save himself trouble, chooses from amongst the emigrants some volunteer door-keepers, who are not too scrupulous in their way of keeping off the crowd. The scenes are sometimes heartrending. For the enforced hospitality accorded them the emigrants have the privilege of paying a mark per day for the first six days, and half a

mark for each day afterward. It is extraordinary that quarantine conducted on these lines—an incarceration worse than any prison in Great Britain, and perhaps than any in Germany—can be tolerated in a country calling itself civilized. The whole system is thoroughly bad, and under all the circumstances of the case unspeakably cruel. It could, however, easily be reformed, if a little humanity were admitted into the interior of the sad walls of these "barracks."—*British Medical Journal*, No. 1683, p. 715.

AMERICAN POLITICS AS AFFECTING PUBLIC MEDICAL OFFICERS.

The American papers report a proceeding on the part of the Governor of Illinois which ought to be stigmatized in the manner it deserves by every medical journal. The old country has many faults. It may learn many things from America. There is one offence, however, of which it is not guilty—that of making changes in the appointments held by medical men at the head of public institutions on a change of government; yet this has just been done in the State of Illinois.

Dr. Dewey, the medical superintendent of the Kankakee Asylum, is to be deposed from an office which he has held with so much credit to himself and advantage to the patients for many years. I speak from personal knowledge when I say that this physician is an honorable man, free from reproach, and devoted to the institution which he has made a great success under the exceptional difficulties which a new departure from the old lines has necessitated—the experiment, namely, of providing a number of separate buildings for the patients in addition to the central asylum. It has demonstrated how much good may be done in this direction, and has exercised a great influence upon the construction and arrangement of similar institutions in carrying out the intentions of Mr. Frederick Wines and others in regard to segregation as opposed to herding thousands of patients together in one monster building.

Dr. Dewey has solved a difficult problem, but now that the tide of political feeling has taken a certain turn, it has swept him away, regardless of his admirable work, and he is to be superseded by another man. That his successor may be a good physician and capable of filling this responsible post, I do not for a moment call in question, but the gross injustice done to a worthy medical officer, on purely political grounds, remains unaltered, and is a serious reflection on the system which permits it.—*D. Hack Tuke in British Medical Journal.*

SPECIAL ARTICLE.

LEGISLATION IN REFERENCE TO QUARANTINE AND SANITATION AT THE PORT OF PHILADELPHIA.[1]

By WILLIAM H. FORD, M.D.,
PRESIDENT OF THE BOARD OF HEALTH OF PHILADELPHIA.

Without the request, consent, or indorsement of the authorities who have charge of the administration of the quarantine affairs of the State, who are presumed to be conversant with the needs of the service, and without any demand on the part of the people who are always quick to discover, and especially so at the present time, any short-comings in the conduct of measures for their protection, a bill has been introduced in the Legislature of Pennsylvania, which is a supplement to the Health laws—House Bill No. 179—creating a State Quarantine Board, defining the duties and powers of the said Board, and authorizing the Governor, under certain contingencies, to wholly suspend the State quarantine. We believe the bill to be unnecessary and inimical to the best interests of the State, inasmuch as it tends to weaken rather than to strengthen the quarantine defences of the State. It provides for the gradual dissolution of State quarantine until finally the Commonwealth will be absolutely deprived of quarantine authority, measures, and equipment, and supremely helpless to lift a finger in the face of any emergency that may arise in the future.

Some of the provisions of the bill are inconsistent, others impracticable, others again disorganizing and positively dangerous in their effects, and most of them are unwise, unnecessary, and subversive of practices which experience has proved to be satisfactory.

If this bill passes, the effect will be to abandon all State authority over quarantine matters, to dismantle and dispose of the present quarantine station which it has cost thousands of dollars to equip, to disorganize State quarantine administration and supervision, and to depend entirely hereafter on the National Government for protection, whether satisfactory or not.

Are we ready for so radical a measure? Is it wise to abandon the State autonomy before the new arrangements shall have been put to the test of time? Boston, New York, Baltimore, Charleston, New Orleans—all maintain their local quarantines in coöperation with the Federal Government. Why should Philadelphia be the exception?

Philadelphia has not asked for this legislation and does not desire it. The city is willing to maintain the present station without a dollar of expense to the State. This is because the city is most directly interested in maintaining an efficient quarantine. And what is for the interest of the city in this regard is for the interest of the State and of the whole country. And why should this organization be broken up and facilities and experience in doing a necessary work for the State be thrown aside, unless it is shown to be useless and positively detrimental? We do not wish to commend ourselves, but it will not be out of place to quote from others to show that the efficiency of the present service has been referred to by competent observers in most favorable terms. The Quarantine Commission of the International Conference of State Boards of Health visited the stations on the Atlantic coast in September last, and in their report they say of the present station that "with the exception of the proximity of residences rendering constant surveillance of 'suspects' detained there necessary, the Lazaretto seems equipped to a degree greatly exceeding that of any other station visited for the treatment of the sick, the isolation of 'suspects,' and for the disinfection of baggage and other effects." After describing the plant and methods of administration, they sum up as follows: "It is with pleasure that the Commission is

[1] Parts of an address delivered before the Committee on Public Health and Sanitation of the House of Representatives, April, 1893, in opposition to House Bill 179.

enabled to say, after careful inquiry, that to Philadelphia at least the Continent may confidently look for the protection against the importation of cholera, so far as she can control its entry by way of the Delaware Basin, and for limiting its spread within her own borders, should it, unfortunately, find its way into the city through other channels."

As you well know, the bill under consideration permits the present station to be maintained until January 1, 1894, and from that date it is to be abandoned, and no other station is to be permitted thereafter within the Commonwealth. If the station is to be maintained the present year, what reason is there why it should not be maintained the succeeding year? Is it not the part of wisdom to defer action until the results of the workings the new system of Federal quarantine in conjunction with State quarantine shall have been made known? Why try the experiment this year, and, without waiting for its lessons, prejudge the case by a decision now, upon results wholly anticipatory? The wisest course would seem to be to defer the whole question until the next meeting of the Legislature, when all information drawn from experience will be at your command, to enable you to act wisely for the best interest of the city, the State, and of the whole country.

Every provision has been made for all necessary rules and regulations for conducting an efficient quarantine, without additional legislation on the part of the State. There is the fullest understanding between the Federal and local authorities, and the heartiest coöperation is to be expected. It could not be otherwise, as there is one common purpose in view.

The Federal Government has at Lewes, Delaware, at the mouth of the Bay, a well-equipped station, with hospital accommodations, barracks for the accommodation of passengers when under observation, and disinfecting plant and crematory. Here vessels will be boarded, the sick removed, and all passengers requiring detention held for observation. Further up the river, at Reedy Island, the Government is fitting up a complete disinfecting station, where infected vessels will be remanded for thorough disinfection and purification of vessel, cargo, baggage, and personal effects. When such vessel, the cargo, crew, and passengers are each and all free from infectious disease or danger of conveying the same, said vessel will be passed up the river to the Lazaretto station, where the local officer will board her, and if satisfied with the sanitary condition, will *visé* the certificate, which allows free entry of the vessel. If he should detect anything wrong that may have escaped the oversight of the officials below, he has the opportunity and authority and facilities to correct it at the station, or, if the circumstances warrant it, to send the vessel back to the lower station. At the Lazaretto the facilities exist for meeting any exceptional emergency. It is not intended to treat systematically cases of contagious or infectious disease at the Lazaretto. Such diseases, if discovered below, will be in all cases intercepted and treated there. Nor is it intended to systematically disinfect vessels, etc., there. But there is the assurance and satisfaction that the facilities exist and are ready for instant use in supplementing the work of the Federal station, should at any time an emergency arise for resorting to them. There is nothing unreasonable in this; on the contrary, is it not the part of wisdom, is it not a duty we owe to the people of this Commonwealth to maintain a complete station as a guarantee of protection of their health and lives in any possible contingency that may arise, though not utilized in all its branches, reserving the right to use it as circumstances may require? Vessels in good sanitary condition, after inspection at the Capes and at the Lazaretto, will be permitted, without stopping at the Reedy Island Station, to pass to their destination without detention.

By this plan no unnecessary work will be performed and no unnecessary delay occasioned. The supplemental inspection at the local quarantine will have the wholesome effect of stimulating the closest investigation by the officials below, so that nothing will be slighted or left undone to require subsequent revision. This is not the least important object of maintaining the local quarantine. Thus assurance will be rendered doubly sure.

Sections 2 and 3 permit a *boarding station* to be established and maintained at the present Lazaretto Station, or elsewhere, but it must be used exclusively as a boarding station, and at no time can it "be used for the purpose of disinfecting vessels or their cargoes, or for the detention or medical treatment of the crews, passengers, or baggage upon such vessels, and no infected vessel is permitted to stop at such station, nor shall any person, or any of the baggage, cargo, or any other article upon any such vessel whatever be suffered to land or be discharged at such boarding station at any time." Consequently, if any vessel should arrive with sickness on board, or if sickness should break out upon a vessel lying in port, which is liable to occur, the disinfection and purification must be performed at the wharf or in the stream, where no facilities exist for the purpose, or be sent all the way to Reedy Island. The sick must be transported through the city to the Municipal Hospital, or be sent all the way to the National Quarantine Station at the mouth of the Delaware, a distance of 100 miles. Thus, the boarding station becomes of little utility. The prohibition thus imposed is absolute, and so detrimental and so unwise that further comment is unnecessary.

The next radical proposition contained in the bill is to sever all supervision, direction, and control of the Board of Health over quarantine affairs of the State, and to place supreme authority in the management of the station, quarantine administration, the making and execution of all quarantine rules and regulations in the hands of a single officer, the quarantine physician, to be appointed by the Governor, without civil service examination or guarantee of fitness for the absolute and responsible duties of the position. This officer becomes an autocrat, with full authority to make and to execute his own rules and regulations without the advice of a board of commissioners or experts in sanitary matters. The delegation of authority to a single individual to make rules and regulations which he himself is empowered to execute is an extraordinary piece of legislation, which is contrary to all precedent, and a very dangerous experiment, especially at a time when the most skilful and efficient administration of laws, rules, and regulations enacted and formulated under the advice of the most expert sanitary counsellors, is demanded in the interests of the public health.

Why all supervision of these important matters is to

be withdrawn from the Board of Health, whose work is intimately affiliated with quarantine business, and is naturally so combined—and has been so combined, with satisfactory results, for well-nigh a century—we are at a loss to understand. Why it should be separated from an advisory board or commission cannot be explained.

We believe that the quarantine physician should be an expert in quarantine administration, and selected after proper civil service examination to test his qualification, and further, that he should hold office in the meaning of civil service so long as his duties are performed with satisfaction. Such an officer should act under the supervision of the Board of Health, or other qualified board, who should have power to make rules and regulations and see to their enforcement, and the quarantine physician should be untrammelled by interference so long as he performs his duties with ability and fidelity.

It is recommended, as the wisest and best solution of the question before you, that the present station be allowed to remain where it is, under the direction and control of the Board of Health, and maintained by Philadelphia, so that it will be ready for instant use should the emergency arise; that the Governor be empowered to suspend the State quarantine whenever he shall be satisfied that the Federal Government has established and is maintaining an efficient quarantine station in the Delaware River or Bay; and when he does so suspend quarantine, to maintain a boarding station at the present Lazaretto Station; that the Port Physician, with two assistants or deputies, in addition to his other duties, perform the duties now intrusted to the Lazaretto Physician and the Quarantine Master, one of them being on duty at the Lazaretto all the year round, where the examination of vessels will be made; that the Port Physician receive a salary of $5000, and his two assistants each $2000, all to be paid by the City, and that all quarantine fees be paid into the City treasury; that the Health Officer's duties remain as they are, and that for his services he receive $6000 per annum, and his two clerks each $1200 per annum, all to be paid by the City, and all fees to be paid into the City treasury; that all of these officers give a bond for the faithful performance of duty, to be fixed in amount by the Board of Health, and to be approved by the City Solicitor; that in order to avoid any delay or unnecessary treatment, all vessels arriving at the Lazaretto having a certificate given by the United States Quarantine officer at the Federal Quarantine Station that the vessel, cargo, crew, and passengers, are each and all free from infectious disease, or danger of conveying the same, shall be treated as coming from a healthy port, and in good sanitary condition, and not subject to further detention, unless it shall appear to the physician at the Lazaretto, by unmistakable evidence, that it is not safe to permit the vessel to enter the port.

By adopting these suggestions we think the quarantine service will be as complete as can be made, and amply satisfactory to the City and the State, satisfactory to the people of Chester and Delaware County, and to the Marine-Hospital Service and the shipping interests. It certainly deserves the test of the next two years, and then at the next session of the Legislature, whatever defects shall have been discovered by experience can be remedied. It is certainly preferable to the revolutionary methods now proposed without the deliberation and knowledge which the gravity of the situation demands.

The repealing sections of this bill are more extraordinary than anything heretofore alluded to, for, in addition to repealing all the specific laws governing quarantine in the city and port of Philadelphia, they deprive the City of its executive health-officer and its chief sanitary officer, the Port Physician, at the same time that they repeal important laws defining their duties as officers of the Board of Health in connection with sanitary work in no way associated with the quarantine of the port. It is useless to read the laws proposed to be repealed, as it would consume more than half an hour, and I do not wish to waste your time.

The Health Officer is to issue permits to captains of vessels upon the certificate of the Quarantine Physician. This he is to do as a State official, and for these services he is to receive $2500 or $3000, to be paid by the State, and all fees are to be paid by him into the State treasury. He is also to supervise the registration of vital statistics, and receive therefor $200, to be paid by the City. All other duties are to cease. Now, it must be remembered that the Health Officer is the executive officer of the Board of Health. It is his duty to execute the City health laws and all orders, resolutions, and regulations of the Board of Health; to abate all nuisances as directed, whether of a general character or in connection with contagious and infectious diseases; to collect all fines and penalties; to prosecute for violation of the laws. His services are indispensable to the proper administration of our sanitary laws. All these functions are swept away, and with them the laws defining important duties, and the City is rendered helpless, and this in the face of an emergency.

The City is also to be deprived of the services of the Port Physician, whose duties are those of a chief sanitary officer directed (with assistants the board is authorized to appoint) to visit infected houses, places, and the sick with infectious diseases, and to determine when, in his opinion, it is necessary to isolate such cases in the Municipal Hospital. The bill repeals this important clause: "The Port Physician, upon request of the Health Officer, or the Board of Health, shall, from time to time, visit and examine such houses and persons as the said Board, or Health Officer, shall have reason to suspect are infected with any dangerous contagious disease, and make report thereof to the said Health Officer."

The Health Officer is directed to "generally enforce and execute the regulations and instructions of the Board of Health; to collect, recover, and receive all forfeitures and penalties imposed, and the sums of money directed to be paid by this act" (Jan. 29, 1818, Sec. 14). And so throughout the Health Laws, where the Health Officer is charged with executing important provisions, these laws fail of execution because of the abolition of the functions of the Health Officer as a City official, as no one remains to execute the laws.

In the name of the Board of Health, in the name of the City of Philadelphia, in the name of good sanitary government, we earnestly protest against this bill. It is wholly unnecessary, many of its provisions are inconsistent and conflicting, others are positively dangerous

in their tendencies; and others again are disorganizing and baneful to the good sanitary government of Philadelphia without any connection or advantage to the quarantine of the State. It is no time to dally with the grave questions of health and life. We are preparing to grapple with a deadly foe, and need the strong arm of the Legislature to assist us, not to strike away the foundation from under our feet. Already we have been hampered in making preparations by the uncertainty of proposed legislation, and we beg you to promptly settle this vexed question in the best interests of the whole people, so that we may know the situation and make preparations accordingly.

CORRESPONDENCE.

CRANIECTOMY AND AGE; A CORRECTION BY DR. KEEN.

To the Editor of THE MEDICAL NEWS,

SIR: In your issue of April 22, on p. 140, I observe that Dr. Allen Starr said "that craniectomy had apparently been undertaken without regard to age. Keen operated on a patient, aged nineteen years," etc. I beg leave to say that the eldest patient I have ever operated on was six and one-half years of age, and that I have uniformly declined to operate on any child over seven years old. Whether the statement that Dr. Hammond operated on a patient at twenty-two, and Weir at eighteen is correct, I do not know, but it has always seemed to me unwise to operate on any patient except in early childhood.

Very truly yours,

W. W. KEEN.

NEWS ITEMS.

The Third Congress of American Physicians and Surgeons.—At a recent meeting of the Executive Committee of the Third Congress of American Physicians and Surgeons it was decided that three afternoons and one evening of the Congress shall be assigned, in sessions of one and one-half hours each, to seven of the fourteen participating organizations, and that each society selected shall be requested to prepare its own program and select its own speakers.

The selection of the societies under this resolution to prepare programs for the Third Congress, was made alphabetically as follows: 1. Anatomists; 2. Climatologists; 3. Dermatologists; 4. Genito-urinary; 5. Gynecologists; 6. Laryngologists; 7. Neurologists.

The Ophthalmologists, Orthopedists, Otologists, Pediatrists, Physicians, Physiologists, and Surgeons, will, under this resolution, in like manner prepare programs for the Fourth Congress.

The President and the Secretary of the Congress, and the Chairman and the Secretary of the Executive Committee were made a Standing Committee to arrange the details of the Congress.

Dr. L. C. Gray was elected Chairman of the Executive Committee *vice* Dr. William Pepper, resigned.

It was further decided to hold the Congress in Washington, D. C., on the last Tuesday in May, 1894, and the three succeeding days.

The Section of Otology of the Pan-American Medical Congress has been rendered necessary by the fact that while the treatment of diseases of the ear has in the past been mainly in the hands of ophthalmologists, the recent advances in the study of diseases of the nose and pharynx have necessarily divided the practical work of treatment of the diseases of the ear; so that at present we find these diseases considered by both ophthalmic and rhinologic surgeons. It is hoped that in this Section surgeons of both classes may meet, and to this end the effort will be made to secure hours not conflicting with those of either of the other Sections.

Communications in reference to papers should be addressed to the English-speaking secretary, Dr. Max Thorner, 141 Garfield Place, Cincinnati, Ohio; suggestions as to work and exhibition of instruments, to the executive president, Dr. C. M. Hobby, Iowa City, Iowa. Dr. H. McHatton, of Macon, Georgia, is the Spanish-speaking secretary.

A Congress of Medico-Climatology will convene in the Art Building in Chicago, May 29th, continuing one week. A choice program has been arranged, and many of the most noted climatologists have promised to be present. Thursday, June 1st, has been appointed a field day for the discussion of the Causative and Curative Relations of Climates to Pulmonary Tuberculosis. Reports from all parts of the world will be presented. Physicians are cordially invited to be present.

The British Medical Association will hold its Sixty-first Annual Meeting at Newcastle-on-Tyne, August 1, 2, 3, and 4, 1893. Dr. George Hare Philipson will preside. The Address in Medicine will be delivered by Dr. David Drummond; the Address in Surgery, by Dr. George Halliburton Hume; the Address in Obstetricts and Gynecology, by Dr. Charles James Cullingworth.

The Health of Chicago.—In the Annual Report of the Health Commissioner of Chicago, it is stated that the general health of the city has never been so good as it is at present. The water-supply, it is said, is better than ever before. The death-rate "is now lower than that of any city in this country or in Europe which has over 500,000 inhabitants."

Philadelphia Pathological Society.—Semi-annual Conversational Meeting was held on the evening of April 27. "Arsenical Poisoning, with Special Reference to its Domestic Sources," was read by Dr. F. C. Shattuck, of Boston.

The Kansas State Medical Society will hold its twenty-seventh annual meeting at Topeka, May 11, 12, 13, 1892. An interesting program has been arranged.

Pettenkofer, of Munich, will, on June 20th, celebrate the fiftieth anniversary of his graduation as a Doctor of Medicine.

The Illinois State Medical Society will hold its Forty-third Annual Meeting at Chicago, May 16, 17, and 18, 1893.

The Missouri State Medical Association will hold its annual meeting at Sedalia, May 16, 17, and 18, 1893.

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ORIGINAL ARTICLES.

KEELEYISM AND KEELEY METHODS, WITH SOME STATISTICS.

BY B. D. EVANS, M.D.,

MEDICAL DIRECTOR OF THE NEW JERSEY STATE HOSPITAL AT MORRIS PLAINS; MEMBER OF THE MEDICO-LEGAL SOCIETY OF NEW YORK, ETC.

IT is the purpose of this article to place before the medical profession some plain facts and statistics relative to the workings of the "Keeley Institutes," their methods and results made by persons who will not be affected whether its stocks go up or down, and whose object is the promulgation of truth and the fostering of the truest interests of medical science.

In the preparation of this paper I have used chiefly data collected by THE MEDICAL NEWS and myself, and among the names of those who have favored us with replies to our inquiries will be found those of some of the most eminent medical men of this country, in the treatment of mental and nervous diseases and inebriety; hence a high estimate is to be placed upon their testimony.

We have to deal with the work and methods of a person who, according to the daily press, disregards medical ethics; who claims to have discovered a combination of drugs that will destroy the appetite for alcoholic stimulants, and, while he claims to have discovered a wonderful "cure," says he will not make known its composition; a man who has stepped aside from the traditions of his profession and forsaken the code that has made the medical profession one of the grandest organizations on earth; a man who has organized a stock company for vending his secret remedies; who has papers published exclusively in the interests of his company; who goes about preaching its virtues, calling upon the medical profession to pronounce his remedies sound, and the ministry to pronounce him a philanthropist. His papers accredit him with doing wonderful things, and the statistics given by his pen and the pen of his employés are very glowing.

Let us inquire into the nature of his remedies and the results of his drugging as seen by competent observers.

On the afternoon of March 30th, I visited the Keeley Institute located at Orange, N. J., which has for its medical director, Allen Burdick, M.D., and W. R. Dabb as manager and treasurer.

The manager informed me that the treatment at this institution was identical with that of Dwight, and that the physician in charge knew nothing of the component parts of the medicine given to the patients—that only three persons in the world were in possession of that secret. The medicines were given in a mechanical way at regular intervals. He further stated that the course of treatment necessary for graduation was four weeks, and in that time the desire for alcoholic liquors was entirely obliterated, and the patient left the institution with no more desire for these stimulants than he had before he ever tasted of them. I then asked: Suppose the patient had an inherited appetite for drink? He replied; "We Keeley people do not recognize an hereditary appetite, and consequently hold that the appetite for drink is thoroughly and effectually taken from the inebriate after his course of treatment here." I was then shown into the room in which the hypodermatic instruments were kept, and in which the patients said they came to get "shot" or be "jabbed." While sitting there, I noticed the man who made the fires and did the chores, dealing out the "dope" to patients, and there came to my mind two thoughts: first, that the injection was given in a mechanical way by persons who admitted their ignorance of its composition; and second, that Dr. Keeley said in public: "it would be inexpedient to allow his remedies to fall into the hands of inexperienced physicians." I wondered how much intelligence and how much experience was necessary in order to become a Keeley physician. The reader must solve the problem for himself.

Four patients came in to be interviewed.

No. 1 was asked how long he had been under treatment and the effect the medicine had upon him. He replied: "Between two and three weeks, and the medicine makes me very sleepy and gives me a feeling of weakness and tiredness about the legs, confusion in the head, and upon trying to read, the letters all run together." I asked; "Are you allowed to drink?" He said: "Yes, but the liquor and medicine do not mix well, as after taking them I am always sick at my stomach." On being asked what he thought of the treatment, he said that at first he was very skeptical, but now had every confidence in it. He also added that he had frequently stopped drinking for six months at a time.

No. 2 corroborated the views and experience of his friend in misfortune, but added that while

taking the medicines he was much annoyed by the appearance of a red rash.

No. 3 said he had been a graduate for some months, and now had not the slightest desire for liquor, and felt that he had perfect control over himself. He also said that he had, by force of will, stopped drinking for over a year at a time.

No. 4, who had been but eight days under treatment, said: "The medicine makes me feel very weak, shaky, and unsteady. When I attempt to read, the letters blur and run together."

On being asked how it affected his throat, he said: "It makes it mighty dry and for several days I have been spitting cotton." He further stated that "The first two days of treatment are a blank to me, as I was so much confused that I do not know what transpired, and I was perfectly sober when I came."

There was, indeed, a general agreement in the testimony of these four patients as to the following points:

1st. That the medicine made them feel tired and interfered with their locomotion.

2d. That it gave them a dry mouth and throat, and, to use the expression of No. 4, "made them spit cotton."

3d. That it dilated the pupils, and they were unable to read without glasses.

4th. That the medicine and whiskey did not mix well, and caused them to be sick at the stomach.

5th. That they had all, since they had considered themselves confirmed drunkards, stopped drinking by force of will-power, from three to eighteen months at a time.

6th. That the medicine apparently supplied the place of alcoholic stimulants.

7th. That while under the influence of the drugs, they had great confusion of mind, loss of memory, and that hours and sometimes days passed which were blank to them.

8th. That upon many of the patients a red rash appeared, generally after taking the medicine a day or two.

While considering the therapeutic aspect of this subject, it would be well to bear in mind Dr. Keeley's statement in Dr. Talmage's church, that his remedies were harmless and that a child might take them in barrelful-doses without danger, and, noting the revelations of their analytic examination and the physiologic and toxic effects that follow their administration, decide both as to the value of his assertions and the character of his remedies.

It was originally claimed by the Keeley people that the principal remedy in the so called cure was bichlorid of gold, and Dr. Keeley allowed statements to that effect to go uncontradicted. Such a preparation being a chemical impossibility, this showed either a very limited knowledge of chemistry on his part, or a decided inclination to speculate upon the ignorance of those not familiar with the fact, and an indication as to the sort of methods this trading medical concern was disposed to adopt.

Upon his attention being called to the fact that the auric salts are toxic, and the inconsistency of giving them in the barrelful-doses he had intimated might be given to a child without harm, his secretary replied that "Dr. Keeley's superior knowledge of physio-chemistry enabled him to so compound his drugs as to get these results." Is it not strange that the medical and literary world has heard nothing about the venerable gentleman's work along this line? Prodigies of that sort rarely remain so long unheard of. Dr. A. W. Jackson, of Brooklyn, gave to the public, through the columns of the New York daily papers, his analysis of the red liquid used by the Keeley people, and Dr. Jackson had ample opportunity, as substitute physician to a Keeley institute, to obtain the genuine preparations, and the profession has every right to credit his analysis, which is roughly as follows: Atropine, strychnine, caffeine, cocaine, and codeine, but it is not to be supposed that the solutions do not vary from time to time in some particulars, though the train of physiologic phenomena that almost uniformly follow their administration makes it practically certain that the change is not very radical.

Dr. Chauncey F. Chapman, in the *Chicago Medical Recorder* of February, 1893 (republished in THE MEDICAL NEWS of March 4, 1893, p. 249), gives the following formulæ and vouches for their correctness.

1. The Tonic, or "Dope": ℞. Aurii et sodii chlorid., gr. xii; strych. nitr., gr. j; atrop. sulph., gr. ¼; ammon. muriat., gr. v.; aloin, gr. j; hydrastinin, gr. ij; glycerin, ℥j; ext. fl. cinchonæ comp., ℥iij; ext. fl. coca erythrox., ℥j; aq. dest. ℥j.

2. The "Shot," or Injection: ℞. Strych. nitr., gr. 9⅒; aquæ dest., ℥iv; potass. perman. q. s. to color.

In addition to these two, an injection of a solution of chlorid of gold and sodium is used to impress the patient, his attention being called to its rich golden color. Then comes the trick, the hypodermatic injection of apomorphine which is given either with or as a substitute for the "shot" while the patient is allowed to drink whiskey.

Dr. J. G. Elliott, of Mercer, Pa., states that the following drugs are to be found in the Keeley remedies: Strych. nitr., atropine, boric acid, ammon. chlor., aloin, tr. cinchonæ comp.

Dr. Norman Kerr, of London, says of the Keeley cure: "The fact is that this falsely called remedy is very dangerous and is compounded of a number of poisonous intoxicants."

Dr. J. E. Usher, of London, in his work, recently published, on *Alcoholism and its Treatment*, says the mixture known as the Dope contains ammon. mur., aloin, tr. cinchonæ comp.; and the hypodermatic injection, strych. nitr., atropine, boric acid, and water. No auric salts are found in either. Dr. Usher goes on to say of Dr. Keeley: "He may claim commercial credit for the systematic and tactful way in which he has worked up his business, which is now in the hands of a trading company. His methods are very irregular and do not invite sympathy, but his knowledge of human nature has taught him to appeal to the psychic or imaginative side of man—that which creates doubt and involves mystery. Here we have a man who is without the pale of Æsculapian principles, and cannot, therefore, be recognized." He concludes by saying: "There appears, however, sufficient evidence that the use of the so-called bichlorid of gold cure is not devoid of danger and risk."

Dr. Jackson, who watched closely the effect of the Keeley preparation administered by himself, while substituting for a Keeley physician, declares that the condition produced by these drugs is worse than drunkenness.

Dr. Graeme Hammond says the remedies used by the Keeley people naturally lead to insanity.

That there are in this combination of drugs which compose the "Keeley secret formulæ," powerful stimulants, both to the circulatory apparatus and the respiratory organs, is very evident. That these powerful stimulants may in a large measure take the place of the alcohol from which the patient is to abstain, it is reasonable to suppose, but that their mechanical administration is fraught with great danger is an absolute certainty.

The symptoms that almost uniformly follow the administration of the Keeley remedies are identical with those attributed by all reliable authors to that class of drugs called by Dr. H. C. Wood, in his treatise on *Therapeutics*, Delirifacients, the prominent members of this family being belladonna, stramonium, hyoscyamus, duboisia, and their alkaloids. Added to these are the nitrate of strychnine and, upon the admission of Dr. Keeley himself, the salts of gold.

Can any man who has any knowledge of the action of these drugs pronounce them harmless and innocent? Yet Dr. Keeley stood in the shadow of the sanctuary and told an intelligent audience that they are so.

The injection familiarly known to the patients as the "Shot" is made to answer two purposes. It is given at regular intervals, and consists of a solution of strych. nitr., the value of which drug in the treatment of alcoholism has long been appreciated by the medical profession; but while the patient is taking alcoholic drinks, which he is allowed to do during his first week, apomorphine is substituted as an injection for the strych. solution, or some other nauseant is given with it. Of course, the drink makes the victim very sick, and in view of the fact that he has had numerous injections that did not make him sick, he associates the drink of the alcoholic beverage with his nausea, and does not trace the nausea to the hypodermatic injection. He is told by the medical director of the Institute that the "Keeley" medicine and alcohol are deadly enemies, and when they meet in his system severe sickness and nausea result. He tries his drink a second, a third, and a fourth time, with the same results, so that he begins to think of alcohol with disgust, and herein undoubtedly lies one of the principal secrets of the "Keeley treatment," and the manner in which the managers inspire their patients with confidence in them and their methods.

The combat between their remedies and alcohol, which they so graphically describe to the patient, and which is verified by his constant sickness while drinking, makes him believe that he is in the hands of a prophet or magician, and he is thereafter placidly subjected to the influences of the mechanic who "jabs" him or "shoots" him and gives him his "dope."

Dr. Keeley, in one of his pamphlets, writes a scathing criticism on the use of atropine in the treatment of the "opium habit," speaking of it as a "virulent poison." He appears to be not without motive, and to an inquiring mind, that motive seems to be a desire to divert attention from the thought that he would use it, or any like drug, in his secret remedy.

He is quoted by a daily paper as saying that "when the medical profession accepts his cure as sound, and admits its efficacy," he will be more disposed to divulge the nature of his valuable formulæ; in other words, if physicians will, by their influence, pour into his coffers the wealth of their inebriate patients, and furthermore, assist in advertising his stock concern, he will deliver over at death, or at his own time and in his own way, the barren legacy—the secret of his aurum potabile.

In the accompanying tabular reports will be found some interesting data as to the sequences and consequences of the administration of the Keeley secret remedies.

RECAPITULATION.

We find in the table 88 cases of insanity following the "Keeley treatment," 83 of them reported by thirty-seven physicians. In about 75 per cent. hereditary predisposition to insanity is denied, and in about 90 per cent. there was no manifestation of mental obliquity, except a morbid appetite for alcohol, previously to taking the "Keeley treatment."

TABLE OF CASES OF RELAPSE, SUICIDE, ETC., SUBSEQUENT TO "GRADUATION" AT KEELEY INSTITUTES.

Physicians reporting.	Address and office of physician.	No. of patients.	Nature of relapse, subsequent history, etc.	Remarks.
Dr. H. P. Stearns,	Hartford, Conn.,	9	.....	No hereditary history. Application was made for another case in which no heredity existed, but the person was not admitted to his institution.
Dr. Richard Dewey,	Supt. Kankakee Asylum, Ill.	8	Cases came more or less directly after residence at the Institute at Dwight, Ill.	Cases were committed to his care within a period of five months. See Internat. Med. Mag., Dec. 1892.
Dr. John B. Chapin,	Supt. Penna. Hospital for Insane.	8	"Relapses."	
Dr. H. A. Gilman,	Supt. Iowa Hospital for Insane.	6	.....	No hereditary history.
Dr. W. H. May,	Med. Supt. New York City Asylum for Insane.	2	.....	
Dr. H. A. Tomlinson,	Supt. Minnesota Hospital for Insane.	1	Was pronounced "cured." When committed to hospital was suffering from maniacal excitement after a debauch.	No hereditary history.
Dr. Edwin Everett Smith,	Supt. of Kensett Private Asylum, South Wilton, Conn.	2	Insanity.	
Dr. J. T. Searey,	Supt. Alabama Insane Hospital.	2	Insanity.	No hereditary history. Very bad cases previously to entering Keeley Institute.
Dr. C. R. Burr,	Supt. Eastern Michigan Asylum.	2	One still remains, a case of alcoholic insanity. Has hallucinations of hearing and sexual delusions. Is irritable and impulsive	
Dr. J. W. Ward,	Trenton Asylum for Insane.	2	One became insane after being "graduated;" the other became weak and debilitated while under Keeley treatment.	
Dr. James Olmstead,	Supt. Connecticut Hospital for Insane.	1	After being discharged went back to former habits. Reported as "relapse," not insanity.	Treated two months at Keeley Institute.
Dr. F. M. Miles,	Central Indiana Hospital for Insane.	1	Commenced drinking immediately after discharge; appetite greater than before treatment.	Treated eight weeks at Keeley Institute; pronounced cured.
Dr. B. D. Eastman,	Supt. of Asy. for Insane, Topeka, Kansas.	2	One committed suicide; the other developed symptoms of general paralysis.	Both were cases of insanity subsequent to Keeley treatment.
Dr. Charles W. Pilgrim,	Supt. Willard State Hospital, New York.	2	Insanity and melancholia in one case, the "relapse" coming shortly after leaving the Keeley Institute. The other used cocaine, being worse than before treatment.	
Dr. J. G. Elliott,	Mercer, Pa.	4	Relapsed into former habits.	Two others were broken down in health; attributed to the process of medication at the Keeley Institute.
Dr. Wm. M. Edwards,	Supt. Michigan Hospital for Insane.	2	1. Insanity. A female of bad neuropathic history; had been twice in Keeley Institute; both times began drinking immediately after discharge. 2. Young man; two weeks after discharge became violently insane; had hallucinations, was markedly restless; suspicious of his own family; at times violent.	No hereditary history. Second case; thirty years of age: married: collegiate education. Had been a drinker four years.
Dr. C. C. Carter,	Dayton Asylum for Insane, Ohio.	3	In two cases extreme nervousness was manifested; in the other decided disturbance of locomotion, his gait ataxic; conversation and manner those of a drunken man.	In all these cases there were apparent injurious results of the Keeley treatment.
Dr. John Curwen,	Supt. State Hospital for Insane, Warren, Pa.	1	Insanity.	
Dr. Wm. D. Granger,	Bronxville, N. Y.	1	Insanity.	No hereditary history.
Dr. Asa Clark,	Supt. State Asylum, Stockton, Cal.	2	One relapsed; the other became insane shortly after leaving the Keeley Institute.	
Dr. F. H. Clark,	Eastern Kentucky Lunatic Asylum.	2	Insanity.	No hereditary history. Both committed to asylum shortly after leaving Keeley Institute.

Physicians reporting.	Address and office of physician.	No. of patients.	Nature of relapse, subsequent history, etc.	Remarks.
Dr. Charles G. Hill,	Mt. Hope Retreat, Baltimore, Md.	9	Six cases of "relapse;" three of insanity.	Dr. Hill states that he has received inebriates who had previously been under his care, and had afterward received Keeley treatment. After being discharged they were recommitted to him. He noticed a decided increase of mental obliquity, and worse, after the Keeley treatment.
Dr. E. N. Brush,	Sheppard Asylum, Md.	3	"Relapses."	Were discharged as cured by Keeley Institute.
Dr. M. Emmons Payne,	West Newton, Mass.	5	All relapsed or became insane. One, a female, developed suicidal melancholia; was very anemic and emaciated. One young man, treated at the Philadelphia branch of Keeley Institute, returned from his course of treatment very drunk.	Dr. Payne says: "I can truthfully state that I do not recall a single cure by the Keeley Institute, except probably the case of one gentleman, aged fifty-five. He remained apparently free from the influences of alcohol for about four years, and then relapsed into his former habits.
Dr. Wm. B. Hallock,	Supt. Cromwell Hall, Cromwell, Conn.	3	Relapsed.	Showed no improvement from the Keeley treatment.
Dr. W. C. Lence,	Supt. Illinois Southern Hospital for Insane.	1	Insanity.	Family history good, and with bright intellect prior to taking the treatment.
Dr. Jos. G. Rogers,	Supt. Northern Indiana Hospital for Insane.	2	.....	Treated in Keeley Institute without success.
Dr. Selden H. Talcott,	Supt. State Homeopathic Hosp., Middlet'n, N. Y.	5	.....	
Dr. C. P. Bancroft,	Supt. New Hampshire Asylum.	1	Relapsed into former habits of alcoholic excesses.	
Dr. B. J. Sanborn,	Supt. Maine Hospital.	1	.....	
Dr. Gerstrom H. Hill,	Supt. Asylum, Independence, Iowa.	1	Insanity. Still insane; general paralysis.	
Dr. R. M. Phelps,	Second Minnesota Hospital for Insane.	4	Three committed for inebriety and one for insanity.	
Dr. James D. Munson,	Supt. Northern Michigan Asylum.	1	Insanity.	Had been under Keeley treatment for two months.
Dr. Eliot Gorton,	State Asylum for Insane, Morris Plains, N. J.	1	Acute mania. Was graduated from White Plains Keeley Institute as cured. Became insane; was sent to Blackwell's Island; became better, and was sent home. Insanity recurring, was sent to Morris Plains.	No hereditary history.
Dr. John L. Buel,	Spring Hill Institute, Litchfield, Conn.	1	Diabetes mellitus. Disease developed immediately after discharge.	
Dr. Thomas Prout,	Hospital in State of New Jersey.	...	.....	Case of inebriety treated by the Keeley remedies, directions carried out in the minutest details. Three days after discharge he relapsed into his former habits.
Dr. H. C. La Force,	Board of Health, Bedford, Ind.	1	"Relapsed" in about a month. While under the influence of liquor shot his wife and committed suicide.	
Dr. P. W. Lewellen,	Blair Institute, Neb.	1	Delirious mania with delusions. Showed signs of mental disturbance soon after discharge; in six weeks was committed to Dr. Lewellen's care.	
Bureau of Vital Statistics,	State of Washington.	14	Three remained "cured" for from six to eight months; ten relapsed into former condition and habits; one suffers from impaired intellect and defective locomotion.	Up to September 20, 1892. Details of all cases given in letter.
Dr. W. Scott Marshall,	Centralia, Ill.	40	Nearly all now visit saloons.	One wrote an article lauding the Keeley methods; shortly afterward dead drunk; sent to branch institute. One remained sober for eight months after first treatment; had previously taken and kept an oath not to drink for a year.

Physicians reporting.	Address and office of physician.	No. of patients.	Nature of relapse, subsequent history, etc.	Remarks.
Dr. H. G. Norton,	Trenton, N. J.	1	.....	Treated at White Plains. Severity of treatment so affected patient's health that he withdrew from the institution.
Dr. J. B. Trowbridge,	Hayward, Wis.	1	Relapsed immediately upon his discharge.	
Dr. J. W. Fowler,	Dubuque, Iowa.	2	Relapsed after discharge as "cured."	
Dr. Chas. W. De Motte.	Audabon, Iowa.	7	Five promptly relapsed; one shows symptoms of mental obliquity; one does not drink, but has the appetite for liquor.	
Dr. B. Brady,	Cincinnati, Ohio.	2	Two relapsed: one developed pulmonary trouble.	
Dr. Frank Fremont Smith,	Bar Harbor, Me.	2	Relapsed. One developed suicidal tendencies.	One requires constant watching.
"The Independent," S. Hathoway, Esq., Ed.	Indianapolis, Ind.	26	Five became insane; twelve committed suicide; one died under treatment; two developed homicidal and suicidal tendencies; three relapsed and died while drunk; three with broken health relapsed. All had been under "gold cure" treatment.	See "Independent," of Dec. 31, 1892, and March 11, 1893, for statistics, addresses of patients, etc.
Dr. R. Schenck,	Greensborough, N. C.	10	Seven relapsed; three apparently benefited.	Many others reported on debauches, or apparently not benefited. The ten reported were personally known to Dr. Schenck.
Dr. R. C. Belt,	Milford, Ohio.	1	Relapsed in less than two months, drinking more than before.	
Dr. T. D. Crothers,	Med. Supt. Walnut Lodge Hartford, Conn.	18	Relapses.	Thirty per cent. of cases admitted were Keeley graduates.
Dr. G. T. Cook,	Supt. Oxford Retreat.	16	Fifteen relapses; one insane.	No hereditary history.
Dr. Albert Day,	Supt. Washington Home, Boston, Mass.	20	....	Dr. Day finds patients worse mentally and physically after Keeley treatment than those who have had no treatment.
Dr. H. A. Tobey,	Toledo Asylum for Insane.	4	Three received no benefit.	No hereditary history. One was a physician who was in charge of an "institute" for seven months. Two had also morphine-habit.
C. J. Gibbons,	Supt. Franklin Reformatory Home, Philadelphia, Pa.	10	Relapses.	All say that after the Keeley treatment liquor "did not make them drunk, but made them crazy;" they went down more rapidly. Has known of several other relapses outside of the Home.
Four,	Other prominent Institutions for the Insane.	15	Twelve insanity; three relapses. One of acute mania came directly from the Keeley Institute to asylum.	The superintendents prefer their names to be omitted.

A large number exhibited symptoms of insanity within a few days after being discharged from "Keeley Institutes" as "cured," and a few went almost directly from the "Institutes" to institutions for the insane.

There were 158 relapses which came under the care or observation of twenty-six physicians. A large proportion of these were in broken-down health, which they attribute and trace to the effects of drugs taken while at "Keeley Institutes." Of these relapses a goodly number suffered from nervous prostration and insomnia, which did not exist previously to their course of treatment.

A group of eighty-eight insane men is not a glowing testimonial to any system of treatment, whether it be systematic "jabbing" and "doping," or what not. And when these disastrous results follow so closely upon the drugging, and the testimony is so direct and pointed as to the cause, the duty of every physician who wishes to uphold the honor and dignity of his profession is plain.

The 158 relapses were only learned of incidentally, and were recorded with the more serious phases of the subject; yet when we consider the fact that this number comes from only twenty-six observers, it is fair to presume as to the magnitude of the failure that really does follow this form of quackery, that is widely advertised as being indorsed by leading physicians, ministers of the Gospel, etc. It is also reasonable to presume that not one tithe of the cases of insanity, nervous disorders, and suicides which follow closely in the wake of the "Keeley

treatment," ever sees the light of even a newspaper report.

No man can with pride and enthusiasm proclaim his downfall, hence the many who go back to their "cups" are never heard from; their friends and relatives take no possible pleasure in exposing their shame and degradation, and thus the relapses of many who have made loud their announcements of victory over "King Alcohol," through the aid of some secret remedy or wonderful nostrum, are kept hidden, and the avaricious manipulators of quackery prosper, and give to the world glowing statistics of their work, while truth is hidden by foolish pride and shame.

While under the stimulating influence of the drugs used by the "Keeley people," many have been induced to write, or have willingly written glowing accounts of their cure, and lauded in eloquent language the virtues of "Keeley remedies;" but according to letters in my possession very many have wished, shortly after, that they had not done so, but lacked the courage to recall these accounts.

A few lines from a letter in my possession, written by a "Keeley graduate" and ex-President of a large Bichlorid of Gold Club, to a friend who asked his advice, will serve as an example. It reads as follows:

"DEAR SIR: I took the 'Keeley cure' nine months ago. While at the Institute I was under the influence of some drug or drugs, which for the time being supplied the fancied need for stimulants.

"I was discharged as 'cured,' and was told that all desire for stimulants had been eradicated. I was given two bottles of medicine to be taken *if* I should have any return of the craving.

"Two days after leaving, the desire for stimulants returned, and I resorted to the use of the medicine. I was troubled with pains in my head and around my heart, such as I never had before. I finally found I had formed, or was forming, a habit as soul-destroying and body-destroying as that of over-indulgence in the use of alcohol.

"I have not yet recovered from the effects of the dosing and drugging I underwent.

"To God's mercy and the care of friends I owe my comparatively good health; to the 'Keeley cure' I owe nothing, and at one time no man could have hoped more of the so-called cure than I; that was, first, while I was under the treatment, and second, while I was still taking the medicine given to me upon leaving the Institute.

"While under the influence of the medicine, and while I thought it was curing me, I wrote a letter recommending the 'Keeley cure,' like many others. I wish now I had never written the letter. Such was my experience, and such was the experience of my brother, whom, while taking the 'Keeley medicine,' I advised to undergo the treatment. I know of five patients who took the 'Keeley cure,' who became insane. They were less fortunate than my brother and I, less able to stand the drugging.

"Of the thirty-three patients whom I knew, who took the cure when I did, I know that over twenty have relapsed into their old habits, some of them after taking the cure twice, and even three times.

"I have no grudge against any person connected with the 'Keeley cure.' I took the cure; I advised others to take it. I even went so far in my blind confidence as to become President of the 'Bichlorid of Gold Club' [the name and location of the club is given in the letter], but now I *know* my belief in the efficacy of 'Keeley's remedies' was misplaced;" etc.

So this letter reads, and such is also the tone of many others. Such testimony needs no comment.

There seems but little excuse for praise or commendation of Dr. Keeley, after one stops and thinks carefully of his methods.

If his remedies are an improvement over those commonly used, then, when we consider that the great majority of sufferers from chronic alcoholism are composed of poor people who are unable to pay for a course at a "Keeley Institute," we must look upon him as sordid, selfish, and without a shadow of true philanthropy, or the humane feeling that should mark the dealing of man with his fellows.

If his remedies are not what he claims them to be, and lack the efficacy and merit he widely proclaims they possess, and he, knowing this, continues to advertise them and prey upon afflicted humanity, what terms shall we apply to him?

If these secret remedies produce the sad and enormous results that our statistics seem to prove beyond a shadow of doubt, those of insanity, suicide, etc., and if he continues to use them for the sake of gain of gold, guaranteeing to his patients their harmlessness, shall not the strong arm of the law be called upon to interfere? Should not the medical profession put forth an organized effort and make an appeal to the State Legislature, in the name of humanity and intelligence, to enact laws to prevent wholesale work of such a character, that is fraught with such dangers to its victims?

The public can afford to tolerate a share of innocent quackery and charlatanism, and be imposed upon by widely advertised proprietary medicines and nostrums, so long as they are simple, not dangerous nuisances; but when their use means insanity and suicide, it is time a note of warning should be sounded, and intelligence assert itself in the protection of public health and safety.

The production of insanity by the use of a dangerous drug does not mean simply an affliction or

calamity to the victim and his immediate family and surroundings, but in many cases it will necessarily be the starting-point of an hereditary taint that will curse with mental obliquity many generations to follow, and yet the "Keeley people" pose before the public as sincere physicians in possession of an invaluable secret remedy that will cure one of the most serious classes of afflictions to which the human race is heir. They claim that the discovery of their remedy is a special providence; yet, for the sake of gold and the greed of gain, they say the composition shall ever remain a secret. They pose as philanthropists, and yet charge large fees for the treatment, thus shutting out the poor and the needy. They parade themselves before the public as the doers of a great moral work, and call upon the ministry to assist in advertising their nostrums, and, much to the shame of some ministers, they have been induced to speak from the rostrum in behalf of a something they know nothing about; to indorse a mercenary enterprise that carries upon the face of it hypocrisy; to lend their pulpits to the advertising of a pseudo-philanthropic medical company; in other words, they have allowed themselves, apparently, to be made cat's paws of for the indorsement and support of a style of work that they claim daily to combat.

After careful examination into "Keeleyism," actuated by a desire to learn something of its merits and statistics from a source other than Keeley organs, paid Keeley lecturers, and newspapers subsidized by Keeley gold, I have been led to the following conclusions:

1. That it is, as Dr. Keeley says, "A system"—a system of charlatanism of large proportions.

2. That the system is carried into effect in a purely mechanical way, and that the "Institute physicians" are little less than local commercial agents, knowing nothing of the "cure" which they handle and administer.

3. That the statistics published by the "Keeley people" cannot be relied upon in the slightest, inasmuch as secrecy is their motto, whenever and wherever it pays in gold.

4. That their so-called cure contains dangerous and poisonous drugs, calculated, by the indiscriminate manner in which they are administered, to produce insanity and other serious psychoses.

5. That the remedy has an intoxicating and exhilarating effect, and that many of the finely written testimonials are written while the patients are under this influence.

6. That secrecy is maintained purely for the purpose of enhancing the commercial value of the commodity, and not because a valuable discovery has been made—speculating upon the fact that with the masses *omne ignotum pro magnifico* holds good.

7. That many ministers and prominent gentlemen who have spoken publicly in behalf of Keeley remedies and methods were actuated to do so by a desire to welcome any agency that would alleviate the evils of alcoholism, and not by any knowledge of the real merits of the "cure" or the nature of the results that follow its use.

8. That any physician who allows himself to indorse the Keeley cure, either in words or by advising a patient to take it, not only commits an act unprofessional, but forfeits his right to the respect of his professional brethren.

SHOT-WOUND OF THE ORBIT.

BY STEPHEN SMITH, M.D.,
OF NEW YORK.

THREE questions are suggested by the following case:

1. *The value of the telephonic bullet-probe in locating a ball lodged in the body.*

2. *The cause of loss of vision after a ball has traversed the orbital cavities transversely.*

3. *The early treatment of shot-wounds of the orbital cavities.*

The patient, C. S., aged eighteen years, entered St. Vincent's Hospital soon after attempting suicide by a pistol-shot through the orbital regions. The ball penetrated the right temporal fossa, one-half inch behind and about the same distance below the level of the external angular process of the frontal bone. He was unconscious for two or three hours, and then completely recovered. The noticeable features of the case were: immediate and entire loss of vision in both eyes; prominence of the eyeballs, but most markedly of the left; normal size of the right pupil and dilatation of the left; neither pupil responsive to light; discoloration of the upper lids and edema of the conjunctivæ; loss of the sense of smell; no pain; no fever; mental condition perfectly normal. During four days he remained in this state, the only apparent change in the eyes being an increased prominence of the entire contents of the orbits and of the edema. There was not, nor had there been, any hemorrhage from the nose. The man ate and slept well and his mind remained unaffected. The course and position of the ball were left to conjecture during the first four days, no probe being used, as his symptoms were satisfactory, and there was danger of injuriously disturbing tissues broken up by the ball.

Three facts were relied on to determine the course and location of the ball: 1. The immediate and total loss of vision, and the prominence of both eyeballs were believed to prove that the bullet had entered both orbital cavities and had destroyed both optic nerves. 2. The complete loss of the sense of smell, without hemorrhage from the nose, indicated that the olfactory nerves had been destroyed without injury to the ethmoid bone. This result could only be effected by the passage of the

ball across the upper surface of the ethmoid near its articulation with the sphenoid. 3. The complete absence of all cerebral symptoms seemed to exclude the brain from any considerable injury. Grouping these facts together, the logical inference was that the ball had traversed the right orbital cavity, crossed the posterior part of the upper surface of the ethmoid, and had entered, and perhaps had traversed, the left orbital cavity, the brain being uninjured.

Dr. Callan, ophthalmic surgeon, suggested, at the consultation, that the sudden loss of vision might not be due to the destruction of the optic nerves, but to pressure by fracture at the foramina through which the nerves pass from the brain. If that view of the case proved to be true, an operation would be advisable to remove the ball, if lodged in the orbit, and any loose fractured bone discoverable. Drs. Gouley and Phelps concurred in this opinion, and it was accordingly decided to first locate the ball with Dr. Girdner's telephonic bullet-probe. Dr. Girdner kindly consented to be present and use the instrument.

On the fourth day after the injury, the effort was made to locate the ball with the telephonic probe. At first the probe passed in a transverse direction, inclining slightly backward and apparently upward, but not sufficiently deviating from a line traversing the posterior orbital cavities to warrant the conclusion that the ball was lodged within the cranial cavity. At the depth of about three inches there was a response, and this was repeated at intervals as the probe penetrated, until its length indicated that the inner extremity was near the left wall of the cranium. After repeated tests it was decided that the ball was lodged within the cavity of the skull near to, if not in contact with, the left frontal bone, at its junction with the temporal bone, in the temporal fossa.

As the greater prominence of the left eyeball, and the direction of the probe, had strongly suggested the probability that the ball was pressing upon the posterior part of the globe, this cavity was next examined with the needle-probe of the telephone. Being slightly curved to follow the external wall of the orbit, the point penetrated to the bottom of the cavity and was made to search all the external region, but with negative results. The failure to find the ball in the orbital cavity rendered the propriety of opening the skull more obvious.

The trephine was accordingly applied at the point indicated by the probe and the dura exposed. Exploration through this opening was next made with a fine needle, and the telephone quickly responded, locating the ball apparently at a higher point than the area uncovered by the trephine, and at a depth of about an inch. With the rongeur the upper margin of the opening was enlarged to the extent of half an inch. The telephone again so plainly located the ball just within the brain that the meninges were divided and a small, blunt forceps introduced along the probe. But nothing was dicovered. The telephone repeatedly located the ball when the probe inclined upward, but the search with the forceps utterly failed to detect any indication of its presence. The effort was discontinued and a drainage-tube introduced through the wound, which the probe now readily traversed from the point of entrance of the ball to the trephine-opening. The patient survived this operation thirteen days. For several days broken-down brain-tissue and pus discharged from the trephine-opening, delirium supervened, and exhaustion followed. The right eyeball showed some tendency to slough, but incisions relieved the edema and pressure.

The autopsy gave the following results: The ball entered the right orbital cavity through the great wing of the sphenoid at its junction with the malar bone. It passed under the optic nerve in a direction slightly upward and backward and escaped from the cavity between the sphenoid and ethmoid, making a furrow behind the crista galli and dividing the olfactory nerves. Continuing, it broke through the left orbital plate of the frontal bone and was found lodged in the posterior and inner part of the left orbital cavity, partly beneath the optic nerve, which was not divided. The ball, of 32 caliber, lay entirely within the cavity, its posterior extremity being quite beyond the level of the orbital plate. The right orbital plate was broken into many loose fragments. The left lesser wing of the sphenoid was slightly fractured at its anterior part, and could be raised with the forceps. The fracture extended to the right optic foramen, but there was no marked displacement of the bones. The left foramen was uninjured. The right optic nerve was apparently somewhat injured, but it was not severed. The left optic nerve did not appear to be injured, though the end of the ball lay immediately under it. The ball was entire and showed no other injury than a small abrasion on the posterior margin.

There was an abscess in the anterior lobe of the left hemisphere of the brain, at the point where search was made for the ball through the trephine-opening in the skull. There was no other evidence of injury to the brain-substance.

The results of the search for the ball with the telephonic probe were not altogether satisfactory. As it passed along the track of the ball, responses were obtained at variable depths. It is probable that the first response occurred when the probe touched the ball, and that the other responses which were heard were due to the passage of the shaft of the probe over the ball, or over fragments which may have lodged on the bone. These responses at variable depths were confusing, and in the final determination of the location of the ball through the entrance-wound the telephonic probe was greatly in error. When the probe was withdrawn, after giving very positive responses, and the distance measured by laying the probe across the frontal region, the indications were that the ball was lodged in the left anterior lobe of the brain, near the external cranial wall. The probe must have passed into the cranial cavity through the opening in the right orbital plate, and then along the left orbital plate to

the external wall. In its passage the shaft of the probe may have grazed the ball where it was lodged, and thus have deceived us as to its exact location. This is the only rational explanation that can be given, although the ball, when found, had fallen completely within the orbital cavity.

In the exploration of the left orbital cavity, in which the ball was lodged, the instrument gave no evidence of its presence. This failure is readily explained by the fact that the probe was passed along the outer wall of the cavity, while the ball lay just within the inner wall.

The failure to discover the ball through the trephine-hole, when the probe apparently distinctly located it in the left frontal region, was very disappointing. The only rational explanation was given by Dr. Girdner, who manipulated the instrument. He states that the probe was so curved at its extremity as to pass over the orbital plate and enter the opening where the ball was lodged in the orbital cavity. This direction of the probe would explain the constant responses of the telephone, while the position of the ball would be such that it would be impossible to reach it with a forceps through the trephine-opening.

It is evident from these explorations that the value of the probe would be greatly enhanced if the shaft were insulated, and only the point were exposed.

The immediate occurrence of total blindness after a shot-wound of the orbits has generally been attributed to division of the optic nerves. Especially would this be the conclusion if the ball were known to have traversed the orbits transversely. The records of military surgery abound with these cases. But the fact of the severance of the optic nerves by the ball, as a usual result of this class of injuries, does not seem to have been established by post-mortem examinations.

Much light has been thrown on the question as to the cause of sudden blindness after injuries of the orbit, by Berlin. At a meeting of the German Ophthalmologists at Heidelberg, in 1879, this author reported three cases of his own, and gave an analysis of 126 cases of skull-fracture reported by Von Holder, who had for thirty-three years been a medical coroner. In 88 of the 126 cases the fracture involved the base of the skull, and in 80 the orbital roof was likewise fractured, making 90 per cent. In 54 cases, or 60 per cent., the lesion extended into the foramen opticum. In 42 of the 126 cases the injury was due to shot-wounds through the mouth or temples. This series of cases seems to establish the fact that the cause of sudden and total blindness after traumatism of the orbital regions is due frequently, if not generally, to a fracture through the foramen opticum, and a displacement of the bones, so as to create pressure on the optic nerve. How far this condition may be relied on to explain the sudden and total blindness following the passage of a ball through the orbit does not appear from these statistics. It is true that the optic nerves were not severed in this case, and there was a breaking-up of the right orbital plate, and a fracture extended into the right optic foramen.

The more rational explanation, however, of sudden and total blindness in a case in which a ball traverses the orbit transversely would seem to be the partial or total destruction of the optic nerves. Such a case would differ widely from those in which the injury is due to blows on the temples or margins of the orbits, or even to the penetration of the orbit by a ball taking a very oblique course. In the former case the optic nerves would be certain to receive direct injury, while in the latter cases there is almost equal certainty that they would escape.

Two questions arise in regard to the indications for operative interference in cases similar to the one here reported. The first relates to the safety of the patient's life, and the second to the preservation of the functions of the eye. In this case it must be remembered that during the first four days there were no cerebral symptoms. The condition of temporary unconsciousness immediately following the injury is not unusual, and does not indicate a lesion of the brain. There was also greater prominence of the left eyeball than of the right, indicating greater intra-orbital pressure on that side from some local condition.

The danger to life from the transit of a ball from one temple to another, through the orbits, depends chiefly upon the immediate implication of the brain-tissue. The orbital plates of the frontal bone, the ethmoid, and the lesser wings of the sphenoid, are very likely to be fractured and somewhat displaced. The fracture of the ethmoid is of less immediate importance. To what extent fractures have occurred must be determined by the symptoms. In many cases of fracture of the orbital plates an effusion soon takes place under the ocular conjunctiva, and then under the lids, the upper lid being the first to show discoloration. This effusion of blood is far more likely to occur after blows about the orbit than after shot-wounds. It did not appear in this case in its characteristic form, but had only the appearance of a bruise. Symptoms of inflammation were not present, and therefore the diagnosis of fracture was purely conjectural.

As there was no evidence of brain-injury, and it was impossible to locate the ball, the treatment for the first four days was expectant. The prominence of the left eye led to the suspicion that the ball was lodged in the posterior part of that orbit. But as the loss of vision was complete, it was not deemed

advisable to search for the ball, unless there were indications that it was doing harm. The same precautions were taken against the use of a probe to determine the position of the ball, lest harm should be done by displacing fractured bones, and the knowledge gained would be useless. It is a well-demonstrated fact that the probe follows the track of a ball passing through the orbits with very great uncertainty and difficulty. The eye is thrown out of position when struck by the ball, but immediately falls back into its proper place after the ball has passed. At the time the probe is used the eye thus lies in the track of the ball, and must be again displaced if the probe is pressed forward. These considerations led to the non-interference method of treatment during the early stages of the case, the purpose being only to meet indications as they might arise.

The introduction of the telephonic probe in the treatment of the case at once changed the indications. If that could exactly locate the ball, then two questions could be settled very definitely, viz.: 1. Whether the ball was liable to do harm if left; and 2. Whether it could be removed without harm. The results of the course of treatment which the probe seemed to indicate have been given.

The conclusions to which this case leads seem to me to be the following:

1. The telephonic bullet-probe is an instrument of great precision in detecting the presence of a ball, but much care is required in exactly locating this when lodged in any region at a considerable distance from the surface. The experience gained in this case made it evident that the precision of the instrument would be increased if the shaft of the probe were protected and only the penetrating extremity were uncovered.

2. Sudden and total loss of vision when a ball traverses the orbits transversely is not always due to destruction of the optic nerves by their division, but may be due either to injury of the nerves, or to pressure from a fracture traversing the optic foramina.

3. If there is no evidence of brain-lesion, or of pressure of the ball upon one eye, as when it lodges in the posterior orbit, non-interference, except to meet indications as they arise, will give the best results. If, however, there is satisfactory proof, as shown by the telephonic probe, that the ball is lodged in the brain, trephining at the nearest point is indicated.

For Acute Maniacal Delirium.—Churton (*Lancet*, No. 3633, p. 861) succeeded in controlling violent maniacal delirium, occurring in the course of three cases of acute disease, by the administration of morphine subcutaneously, in conjunction with the inhalation of chloroform.

TRIONAL, THE NEW HYPNOTIC.[1]

By J. B MATTISON, M.D.,
MEDICAL DIRECTOR OF THE BROOKLYN HOME FOR HABITUÉS.

Trional is one of the latest additions to our soporific resources, and, along certain lines, there is reason to think it the greatest. First used in the Hamburg Hospital, reports of its value have come mainly from German sources; but I have given it one hundred times, with a measure of success that prompts me to make this report.

Trional, like sulfonal, depends, for its power, on the presence of ethyl groups in its chemical constitution, and in color and taste the two drugs are much alike. Trional can be given in fine powder on buttered bread or meat, in hot tea, soup, or milk; or dry, on the tongue. It is sedative, but not analgesic. Pain prevents its hypnotic action.

Boettiger, of Bonn, last year reported the results of an extensive therapeutic study of the drug, based on his use of it in seventy-five cases of insomnia, simple and primary, or due to pain or psychic excitation. In regard to ordinary agrypnia, his testimony is in accord with that of others—that trional is a prompt and effective soporific. In these cases, he gave doses of from 1 to 2 grams, which induced sleep in from 15 to 75 minutes, and lasting for from 6 to 9 hours. The sleep was usually deep, quiet, dreamless, and unbroken. In the treatment of agrypnia associated with posterior spinal sclerosis, trional failed.

Schaefer also found trional useless when physical pain was pronounced. In cases of hysteria, deep sleep was produced by 1 gram. In 33 cases of insomnia attending mental disease, doses of from 1 to 2 grams brought sleep within 90 minutes at longest, and lasting for from 6 to 10 hours. The drug failed in one case of paralysis and one of hallucinations attending senile marasmus. It proved effective in chronic alcoholic dementia, unattended by mania or hallucinations; but not in acute hallucinatory alcoholic delirium.

In marked mental excitement, Schaefer describes his results as "astonishingly good." He cites a paralytic, restless, crying, and destructive, in whom it acted kindly after hyoscine had failed. In some cases good results followed the administration of 1-gram doses several times daily.

Among the 75 patients to whom trional was given, in only 7 was there no effect. In 20 cases the sleep was short and slight, and in most of these the failure was ascribed to the diminutiveness of the dose, which varied from 1 to 4 grams, the maximum being 6 grams in twenty-four hours. In several cases, doses of from 1 to 2 grams were given repeatedly during

[1] Read before the Brooklyn Neurological Society, April 12, 1893.

the day. To secure sleep or quiet at night the drug was given between 8.30 and 9 P.M.

The drug was given by the bowel 24 times in doses of 2 grams; it was rejected but once. The results were as good and as prompt as when the drug was given by the mouth. In 6 cases the effect continued through the forenoon after the day of administration. Two failures were due to physical pain and one to hysterical excitement. No irritant after-effects were noted. Changes in pulse and breathing were not observed. Anorexia, vomiting, and diarrhea were present in one case, after a dose of 4 grams. Six patients complained of vertigo and 10 of lassitude on the day after the administration. On several occasions it was found that 1 gram of trional proved as efficacious as 3 grams of chloralamid or amylen hydrate, while 2 grams had a much stronger action than 3 grams of either of the other remedies.

Boettiger thinks 3 grams the maximum dose. Brie, of the Provincial Asylum, Bonn, in a paper published last December, reports a similar experience, which is confirmed by that of Schultze, Schaefer, Barth, Rumpel, Garnier, Ramoni, and Mariottini.

Schultze gave 1000 grams to 76 different patients with such good results that he places it in the front rank of hypnotics. Schaefer gave it in 77 cases, both by the mouth and by the bowel, in doses of from ½ a gram to 4 grams, with such good effect that he thinks it leads the list of soporifics.

Mariottini asserts, from his experience, that trional has double the power of sulfonal, and that it is much speedier in effect. He gave it in fine powder, in milk or tea, from 10 to 20 minutes before retiring, and secured from 6 to 7 hours of sleep. In only one case did he note the gait to become ataxic. No toxic effect was observed, and none upon the temperature, circulation, respiration, stomach, or bowel.

Mabon,[1] of the Utica State Hospital, gave trional 35 times to 10 lunatics, with good results; in most cases in doses of 1 gram, in hot milk, at bedtime, which were followed in from 15 to 45 minutes (though sometimes not for two hours) by from 6 to 9 hours of dreamless sleep. Schultze found trional active in 75 per cent. of his cases, Schaefer in 86 per cent., and Boettiger in 89 per cent.

I have, since last December, given trional 100 times, with success in 90. All the patients were, or had been, opium, chloral, or cocaine habitués—certain conditions of which test strongly the power of any hypnotic. The drug was given dry on the tongue. The initial doses were full—40 grains for males, 30 grains for females—and were usually given at 7 P.M. I have known sleep to come on in half an hour after the administration of the drug, but in most cases it was delayed, as with sulfonal, for three or four hours. The sleep was sound and refreshing, and lasted for from 4 to 11 hours.

The maximum amount of slumber occurred in a morphine-cocaine case of some years' standing, kindly brought to me by Dr. Hedges, house-physician of the Presbyterian Hospital. In this case trional acted surprisingly well, the first dose of 40 grains being followed by 11 hours of slumber; other doses, of from 30 to 40 grains, giving 8, 9, and 10 hours of sleep. In five weeks the man left, with normal sleep and free from drugs.

In a case of ten years' chloral-taking, reaching a maximum of 120 grains nightly, trional served an admirable purpose, no chloral being given after the first night. The initial dose was 40 grains, which was gradually reduced, during three weeks, to 15 grains, when all hypnotics—save a psychic soporific—were withdrawn. Five weeks later the man was dismissed, cured.

In a twelve years' case of morphinism, notable from the fact that the woman, on coming to me, was taking only $\frac{8}{10}$ of a grain subcutaneously daily—a condition quite exceptional and largely due to the drug not being self-given—trional, in doses of from 20 to 30 grains, was the only soporific used. It worked well. The lady recovered.

In several other cases the drug responded satisfactorily. No ill effect on pulse or breathing was observed. In one man and in two women vertigo was noted, and in two male morphine-cocaine cases the gait was decidedly "groggy" on the day after the administration. In one woman a dose of 30 grains seemed to cause a sharp but short attack of gastric cramp, which subsided without treatment and did not recur.

In another case, a morphine-habitué, a dose of 40 grains caused severe epigastric pain and repeated vomiting. Another trial gave a like result. This case was not a fair test, as the man was more largely burdened with idiosyncrasies than anyone ever under my care—chloral, sulfonal, and paraldehyde each causing gastro-intestinal derangement, without sleep, which was finally secured by two doses of 5 and 10 grains of extract of cannabis indica at an interval of two hours.

In several cases the sedative and hypnotic effect was prolonged to the day after the administration, and in some till the second day—the drug in this respect resembling sulfonal. The prolonged sedative effect was marked in one woman, who slept all night after a dose of 30 grains, and was quite free from nervous unrest on the following day, the symptoms returning when the trional was omitted.

In another more recent case of morphinism the patient had 8 hours of unbroken sleep after taking

[1] American Journal of Insanity, vol. xlix, No. 4, p. 579.

30 grains; he felt calm on the following day, and slept well again at night without the drug. This patient, a physician, declared that the effect was more profound than he had ever experienced from sulfonal, chloral, or paraldehyde. He also asserted that a marked psychic effect was produced, closely akin to that caused by morphine—so much so as to suggest a decided risk of tolerance if the drug were long continued.

In all cases of failure with trional that I have noted, other than the one case of gastro-intestinal disorder, there is reason to think it mainly due to the smallness of the dose.

In a case of morphine-cocaine inebriety careful comparative observations were made as to the effects of equal doses of trional and sulfonal. The result was always in favor of the former.

There is a consensus of opinion as to the hypnotic power of sulfonal in the early abstinence-time of narcotic inebriety—a time when chloral and paraldehyde fail to do good, but I think sulfonal is surpassed in this condition by trional. It has been along this line entirely, with one exception, that my trials with trional have been made, and I am bound to say that I regard it of special and superior value in this condition. The agrypnia of this period is usually so profound that full doses of any soporific are essential, and I commend one maximum rather than two medium doses.

In simple insomnia doses of from 20 to 30 grains will suffice. In marked cases from 30 to 40 grains are best. Trionalism is a possibility.

I have found the effect of trional more certain, pronounced, and prolonged than that of sulfonal, and my experience, with that of foreign physicians, warrants me in thinking it the most powerful hypnotic now at our command.

ORIGINAL LECTURE.

EPILEPSY—CERVICO-BRACHIAL NEURALGIA.[1]

By HENRY M. LYMAN, A.M., M.D.,
of Chicago,
Professor of the Principles and Practice of Medicine in Rush Medical College.

I. EPILEPSY. (PETIT MAL.)

This patient is forty-two years of age; he began to show symptoms of disease about three years ago. About twenty years ago, a gun which he was in the act of discharging burst in his hands and shook him severely, although he did not tell his father and mother about it for years afterward. No injury of any kind was noticed. He is a married man, and is the father of four children. His father and mother are healthy, and the patient was very healthy when a child. He comes to us to-day saying that occasionally he has spells of unconsciousness, in which he does not seem to have control of himself. These spells, he says, are "momentary." His father tells us that on one occasion, when he commenced to eat, his hands suddenly dropped down into his plate, and he turned pale for a few moments, losing consciousness. He then raised his hands, looked at them, and commenced eating as though nothing had happened. Later on, the attacks became very frequent, and at the present time he has as many as four or five a day. During the last three or four years he seems to have lost much of his previous energy. His general expression of countenance is not what it used to be; he is now stolid and dull. He remembers the incident at his father's table when his hands dropped. He says also that he remembers "certain similar feelings" that came over him at different times. When these attacks come on, his feelings are disagreeable, but in a short time this sensation leaves him and he feels as usual, until another attack occurs. These attacks last only a few seconds, and occasionally he loses consciousness. The patient says that he does not feel like working as much as formerly, and he thinks that he has lost strength in his arms and legs to a certain extent, but has lost no flesh. He has no pain, no headache, and he sleeps well. He has no attacks during the night.

The characteristic symptom in this form of epilepsy is the non-convulsive nature of the attacks. It is worse for the patient than convulsive seizures. We have here a history that illustrates this fact very well. The man is of healthy parentage, strong, vigorous, muscular, well built, with the disease not manifesting itself until he is nearly forty years of age; without the occurrence of any other disorder, the patient becoming affected by the seizures which have been described, and a change in his whole constitution showing itself. Instead of being active and vigorous, he feels disinclined to active exertion. His intellectual faculties are less vigorous than they were. His father says the expression of his countenance has changed, and you will notice, on looking at the patient, that his expression is one of intellectual torpor—a sluggishness so characteristic that the practised eye of the diagnostician could hardly fail to detect the nature of the disease. The physiognomy shows what the trouble is.

The question is: What can be done for such a patient as this? In the first place, we must consider the etiology of the disease. We may lay down the general rule, to which there are a good many exceptions, that when epilepsy comes on late in life or past middle life, it is due to a degenerative change in the brain, of a very palpable character. In the majority of cases this degenerative change is due to syphilis, but it is not so in all. As far as we can learn, there is no syphilis in the history of this patient. We must investigate that point more carefully, however, because sometimes we can discover traces of the disease when it is least to be expected. Another cause of degeneration of the brain may be a general rheumatic diathesis, an arthritic condition of the system, a tuberculous deposit, or changes incident to advancing years, or to premature old age. We have neglected to inquire about one cause of degeneration of the brain, that is, the use of alcoholic stimulants. His father tells us that he never uses any. Patients who

[1] Delivered February 16, 1893.

drink hard are very likely, late in life, to experience degenerative changes in the brain, which result in epilepsy. Alcoholism is, however, to be excluded in this case, so that we must return to the hypothesis of premature senility and degeneration affecting the brain.

The question arises as to whether there is a general or a local degeneration of the brain, for we sometimes have epileptic seizures coming on as a consequence of the development of a tumor in the brain, which may be tuberculous, syphilitic, or malignant. Against the hypothesis of tuberculosis is the history of the patient, and the absence of any tuberculous disease or cachexia. Against the hypothesis of a malignant tumor is the fact that the patient presents a florid complexion; he appears to be in good general health. So far as malignant disease is concerned, there is usually an impoverishment of the blood. The patient becomes emaciated, and suffers from loss of strength, which continues with the progress of the disease. These features are absent from this case. Furthermore, in focal diseases of the brain there are local irritations, convulsions, and paralyses. I saw a case some time ago in which a tumor developed in the motor zone of the right side of the brain. The patient was awakened in the night with convulsions affecting the left arm, then gradually extending and involving the left leg also. There were one-sided convulsions; then the arm and leg became paralyzed, and the patient died of a malignant tumor which was found in the Rolandic region of the brain. Focal symptoms indicate that the disease is limited to a portion of the brain; but in this case there is nothing of the kind. It is a general degeneration affecting the cortex. Why the cortex of the brain? The incident of the patient dropping his hands at his father's table points to the portion of the brain that controls the hands, and it shows that at the time of the attack the motor region of the brain which is connected with the arms was in a state of temporary paralysis.

Is there any general symptom present that indicates a continuous degenerative process in the cortical structure of the brain? The patient is not as bright, mentally, as he ought to be, which shows that the cortical portion of the brain—the organ of the intellect—is not in its normal condition. The failure of energy and of intellectual capacity indicates that. We do not know where the intellect is specially located. We do not know whether it is chiefly in the anterior lobes of the brain, or whether intellectual functions are associated with all of the cortical processes of the brain. But, at any rate, we know that it is the cortical portion of the brain that is concerned with intellectual activity; therefore I believe it is there that the principal seat of the difficulty is to be found. In these cases, when you have an opportunity to examine the brain after death, while perhaps there may be no marked appearance that presents itself to the naked eye, the microscope will show that there is a destruction of important ganglionic cells in the gray matter of the brain. They are fewer in number, and there is an encroachment upon their territory by the neuroglia of the brain-substance, and thus the thinking instruments of the individual are reduced in number and in vigor. Just how this change produces the seizures which the patient has and the temporary loss of consciousness, we do not know, though we may guess at a good many explanations.

The father tells us that when the patient has these attacks he always turns pale. That is an interesting and significant fact which is observed in a great many cases of epilepsy, but not by any means in all. There are certain cases of epilepsy in which—when you have an opportunity of witnessing the attack—if you put your finger on the pulse you can feel the artery beating distinctly, but just as the attack comes on the pulse ceases and the patient turns pale. It is not often that you have an opportunity of making such investigations. I have never had an opportunity of observing this but once in all of the patients I have seen during an epileptic seizure, and I believe I have seen as many cases of epilepsy as most physicians. I have many a time put my finger on the pulse of the patient when convulsions were recurrent, and have failed to notice any stoppage ot the pulse. As the paroxysm comes on, when it does occur and the patient turns pale, the presumption is that the heart momentarily fails to irrigate the brain with its normal supply of blood.

A theory has been constructed by physiologists that the occurrence of a nervous storm in the brain excites a spasmodic contraction of the coats of the vertebral and carotid arteries and of their branches, so that the supply of blood is cut off from the brain, and during the temporary cessation of circulation the patient is thrown into a convulsion through want of blood in the brain, just as you may excite convulsions by compressing the vertebral or carotid arteries of a rabbit or other animal, the animal dying in convulsions. As the paroxysm comes on, you have in such an experiment the clearest evidence of the closure of the vessels and stoppage of the heart's action. We may, however, suppose, as a consequence of the change which has taken place in the brain, that there is a temporary cessation of circulation in the cortical parts of the brain—in one lobe, for instance, or in the frontal lobes. We may indulge in that hypothesis, but it is not verifiable. We are very much in the dark as to the actual causes of the paroxysm.

Whether it be of a convulsive or non-convulsive character the important thing is to endeavor to arrest the frequency of the attacks. We are told that this patient has four or five attacks a day. There is an evident deterioration of the brain going on, and it is desirable to arrest the paroxysms. If they cannot be arrested, we must resort to the treatment I related to you in a previous lecture, along with general hygienic care, keeping the bowels open, regulating the diet, and cautioning the patient to avoid overloading his stomach. Many of these patients have a great appetite, and eat too much; it is so with this man. His father tells us that since the development of the disease he eats as much as two men, and even then goes away from the table hungry. Intervention of the physician is necessary in these cases. There is no special need for so much food; there is a perversion of the normal appetite, which must be restrained. We should allow the patient only as much food as he was in the habit of eating when he was well. If this is not done, he will eat too much, distend his stomach, and presently will get dyspepsia. It is necessary in these cases to study the condition of the stomach and to learn what form of dyspepsia you have to deal with. At first

there is an excessive secretion; as a consequence of the morbid state of the nervous system, the gastric glands secrete too much gastric juice, and there is an excess of hydrochloric acid in the stomach that irritates it; by and by inflammation results, which finally leads to dilatation of the stomach. There occurs the formation of toxic substances in the stomach that are absorbed and act as poisons. This patient should be given such food as is easily digested. He should take plenty of milk, meats, vegetables, fruits, and bread in moderation, and, if used at all, sweets in a very limited degree.

In order to find out the state of his stomach it is necessary to withdraw its contents and analyze them. If you wish to be very careful to ascertain exactly what the condition is, you must not only make a qualitative but a quantitative analysis to find out whether hydrochloric acid is in excess or not. When there is torpor of the stomach, there will be, perhaps, an entire absence of hydrochloric acid. The contents of the stomach will be sour, and there will be fermentation and eructation of gas, and organic acids will be present in excess. The qualitative analysis reveals the fact that there is no hydrochloric acid present, but a great deal of organic acid. Have the stomach washed out, because there is stagnation and decomposition of its contents. Apply electricity—the faradic current—over the stomach in these cases, placing a sponge electrode upon the sternum or upon the back of the neck for about five or ten minutes. In this way you promote contractility of the muscular coats of the stomach. Give also nux vomica and powdered ipecac. These are two useful drugs for atony and dilatation of the stomach. You may give a pill that contains one-quarter or one-half of a grain of extract of nux vomica, with a tenth of a grain of powdered ipecac. You may add also extract of gentian. Find out whether the bowels are constipated, and, if necessary, include aloes or aloin in the pill, which should be taken after each meal. You must also have the patient drink hot water before meals, because that stimulates the muscular coat of the stomach. The use of electricity, massage, cold sponge baths, friction of the skin, and plenty of exercise in the open air are among the most valuable means of curing dyspeptic conditions. Whenever you have a case of epilepsy, be sure to investigate the condition of the stomach and digestive organs.

II. CERVICO-BRACHIAL NEURALGIA.

This patient comes to us with a history of severe neuralgia. He is now in a paroxysm of pain. He is suffering from neuralgia of the cervical nerves and brachial plexus, with which he has been afflicted for seventeen years. He is a tailor by trade, thirty-six years of age, and is an incessant worker. He has been under treatment for a long time, without much improvement, and comes to the clinic to-day for the purpose of having a further investigation of his case. The attacks last twenty minutes, and take place both during the day and night. During these attacks the right arm becomes powerless.

We may reasonably consider this case as a professional neurosis. People who work at certain employments require the constant difficult use of certain muscles; consequently, we frequently have various forms of spasm or paresis as a result of this exhaustion. One of the most notable forms of this disorder is what is known as writer's cramp, which appears in three different forms. In one form of the disorder there is spasm of the muscles that are concerned in the act of writing; in the second there is temporary paralysis of the muscles; in the third there is intense pain in the parts that are employed. The same thing is true not only of persons who write, but of anybody engaged in monotonous muscular occupations, such as watchmakers, jewellers, musicians, blacksmiths, etc. Smiths may finally have cramps in the muscles of the arms or hands, or there may be paroxysms of severe pain running up the arm and shoulder and chest, lasting for a considerable time, and then ceasing. The question arises whether there may not be something of this nature in the case before us. The patient is a tailor by trade and is continually moving his arm in the manner which I show you (illustrating the arm movement of a tailor in the act of sewing), or with a large pair of shears he is engaged in cutting out garments—an act that requires continual peculiar movements of the forearm and shoulder analogous to those of a writer. I think that this case should come under the category of the professional neuroses, from the fact that the man has been engaged in tailoring for years, and says that his condition is growing worse; that it affects the arm and side most that are used in his occupation. He does not suffer in other parts of the body, and is apparently in good health in other respects. It is certainly not a case of professional paralysis or of professional spasm, for it does not trouble him to move his arm when the attacks come on.

In cases of occipital neuralgia you will find that while there is a history of intense pain, distributed over the region supplied by the occipital plexus, there are points where the pain is particularly severe. These are the prominent points of the skull, and the patient will indicate the region of pain. There may be pain at the points of prominence upon the occipital bone to which are attached the posterior cervical muscles that pass down to the vertebræ. There is a spot on the mastoid process of the temporal bone which is frequently painful, so that at different points upon the head, according to the location of the neuralgia, you will find tender spots, not because of inflammation or exudation in the part, but because the particular branch of the nerve at that point is sensitive to pressure. These constitute the tender points of neuralgia, and enable one in many instances to distinguish between a neuralgic pain and a pain due to the muscular soreness of rheumatism. The sensation is different from that of syphilitic, rheumatic, or traumatic periostitis, in which the soreness is diffused all over and around the bone, without being restricted to any circumscribed point.

Under these circumstances it becomes necessary to inquire particularly as to the antecedents of the patient with reference to his predisposition. His mother and brother were paralyzed as a result of cerebral hemorrhage—a fact indicative of a predisposition to disease of the coats of the arteries. The patient is stout, although he is a young man; the increase in weight is not a natural one, such as sometimes occurs during the later period of life, but it is due to a constitutional predisposition to accumulate fat. There are no enlargements of the veins

of the body, except about the head. So far as we can ascertain, the patient has never had hemorrhoids or trouble with the kidneys. His color is more sallow than usual; the tongue is coated and indented; and there are dark rings under the eyes. All this shows that he is in an enfeebled condition. Although the patient is large and bulky, still he is not strong—a fact which is to be taken into consideration. His father died of carcinoma of the stomach. He has brothers and sisters living who are stout and robust.

Persons that die of carcinoma of the stomach are such as generally for a long period of life have suffered with acid dyspepsia, a form of dyspepsia in which there is an excess of hydrochloric or other acid, and such patients have an arthritic diathesis. The fact of the mother having had paralytic strokes strongly indicates the probability of an arthritic diathesis in her children. Another characteristic of the arthritic diathesis is a tendency to obesity, so that we have here, undoubtedly, a predisposition underlying the patient's troubles.

The arthritic diathesis is the result of a conformation and structure of the body which may be either inherited or acquired; patients so predisposed are liable to skin-disease of an eczematous character, dandruff in the hair, early falling and whitening of the hair; varicosity of veins, especially in the lower extremities; hemorrhoidal difficulties, asthmatic paroxysms and difficulty of breathing, palpitation of the heart, neuralgia, rheumatism and gout, obesity, polyuria, and diabetes.

This patient suffers with a tendency to obesity because of an arthritic diathesis.

In the treatment of such a case as this, you must, in the first place, have due regard for the diathesis. Unless you can overcome the predisposition it is impossible for you to do any permanent good to the patient. We must not only endeavor to relieve the neuralgia by the administration of anodynes and narcotics, but we must strive to obviate the tendency to obesity and other forms of arthritism, which is the underlying cause of his suffering. Something may be effected by regulating the diet of the patient. These patients must not be allowed to eat sugar or sweet foods, and the quantity of starchy food should be limited. They do not digest these substances well. The use of starch and sugar by such patients tends to increase their weight, and by and by it may produce diabetes; we must, therefore, regulate the diet in these respects.

The patient should take a great deal of exercise in the open air, so as to work off his fat as much as possible. He should also take a good deal of gymnastic exercise. The profession of this patient is an unfavorable one in that regard. You know how it is with tailors. They work in close, warm rooms, and when they go outdoors they are sensitive to cold. When you go into a tailor's shop you are in a close, murky, unwholesome atmosphere, which is prejudicial to health. The workmen sit or stand at a table, sewing or cutting, using certain sets of muscles, while others remain unemployed, which is prejudicial to the health of the muscles and nerves. A great deal of exercise of all of the muscles may be had with dumb-bells, pulleys and weights, etc. In addition to exercise you must administer such medicines as will relieve pain; hypodermatic injections or morphine will do this, but you must not be content with that; you must attack the diathesis with alkalies or acids. Hydrochloric acid, nitro-hydrochloric acid, sulphuric acid—almost any of the organic acids may be administered for weeks at a time with great benefit. If there be an excess of hydrochloric acid, the use of alkalies is indicated, and the best alkalies are sodium bicarbonate and potassium bicarbonate, to be taken three hours after eating in doses of from 5 to 20 grains, as the case may be, to neutralize the excess of acid. This also has the effect of relieving the pain the patient experiences. In many instances you will find that patients who have an excess of hydrochloric acid in the stomach, suffer with intense headache until the acid is neutralized by the administration of an alkali or by vomiting. An emetic is disagreeable, but it is very effectual.

We sometimes fail in giving more than temporary or palliative relief to these patients, for the reason that we do not recognize the diabetic condition. Continue the alkaline or acid treatment for weeks and months, as the case may seem to require, just as you would treat a case of chronic rheumatism or gout. Stimulate the kidneys, and regulate the bowels, and in that way you will succeed in giving a longer period of relief. I will not say that you can cure these patients, for while they may be relieved for years, they are liable to have a return of the disorder in some other form. As they grow older there may be an increase of gastric distress, and general, vague, nervous symptoms that render the whole lives of such people miserable, sometimes terminating in lithiasis or malignant disease. There is a wide range of disorders to which these patients are liable.

CLINICAL MEMORANDUM.

CLINICAL REPORTS IN LARYNGOLOGY.

BY S. G. DABNEY, M.D.,
OF LOUISVILLE, KY.

I. TUMOR OF THE LARYNX FROM AN AVOIDABLE CAUSE.

ON taking charge of the Department for Diseases of the Eye, Ear, and Throat in the Louisville City Hospital, on October 1, 1891, I found in the wards a patient suffering from loss of voice. There was neither cough, pain, nor difficulty in respiration. The man, whose age was about thirty-five years, had a scar upon the neck just below the thyroid cartilage. He gave the following explanation of its occurrence: Some two months previously, while in a drunken stupor, he had been assaulted and this wound inflicted. The surgeon who was called sewed up the wound, and it had healed readily, but his voice had never fully returned and for several weeks had been reduced to a whisper. On laryngoscopic examination I found the upper portion of the larynx normal, but beneath the vocal bands, and pushed a little way up between them on attempts at phonation, was a red mass, in size between that of a raspberry and that of a cherry. Its point of attachment was on the anterior wall and corresponded to the external scar. Its surface was rough, and on touching it with the probe there was slight hemorrhage. After training the throat to the presence of instruments, of course with the aid of cocaine, I removed a considerable portion of the mass with forceps and found imbedded in it a suture about one inch in

length. This had doubtless caused the growth of the granulation-tissue about it, and its removal was followed by speedy disappearance of the remaining portion of this tissue with complete restoration of voice.

The aphonia was evidently due in part to obstruction of the expiratory current, and in part to mechanical interference with approximation of the vocal bands.

II. RETRO-PHARYNGEAL ABSCESS, WITH ENLARGED TONSILS.

In November, 1892, I was called in consultation to Shelbyville, Ky., to see a child between three and four years of age. The history of the case was as follows: The little patient, some three weeks previously to my seeing him, had been attacked with a slight sore-throat and an increase in size of the already enlarged tonsils, accompanied by mild fever. There had been no pain after the first few days, no fever, and no difficulty in swallowing, but there was decided and constantly-increasing dyspnea. At the time of my visit the breathing was such as we often seen in children with enlarged faucial and pharyngeal tonsils, but certainly more difficult than usually attends these diseases. There was, however, no blueness of the skin, nor any general disturbance, except exhaustion and a tendency to somnolence, which had been noticed for about twenty-four hours.

There had been marked swelling beneath the right ear and extending down the neck; this had diminished, and in what remained I could detect no evidence of fluctuation. Examination of the throat showed both tonsils to be enlarged, the right much the more so. I removed the projecting part of this with a small Mathieu's tonsillotome; but the difficulty in breathing was but little improved. Palpation with my finger failed to reveal fluctuation, and was not satisfactorily made in the struggling, gagging child. Though realizing the dangers of chloroform in such cases, it seemed nevertheless expedient to administer it. This was most skilfully done by Dr. Pratt, of Shelbyville, with whom I saw the case in consultation, and to whose active and efficient aid the fortunate outcome was in large measure due. The anesthetic was taken badly, as was to be expected in such a case, and at one time disaster was only averted by artificial respiration maintained by Dr. Pratt, while I held the child up by the heels. While the patient was under the anesthetic, I found low down on the right side of the throat, bulging toward the middle line and pushing down the epiglottis, a decided swelling with well-defined fluctuation. An opening was made into this with a bistoury guided by my left forefinger, and a considerable quantity of pus evacuated. A part of this came out through the mouth, but the greater portion of it evidently passed into the stomach.

Recovery from the chloroform was fairly good, but the breathing continued labored. On rousing the child he would take a deep inspiration, and perhaps be wide awake for a minute or so, then relapse into stupor and heavy respiration. These symptoms became more and more decided, and were accompanied by a very weak pulse and a cool clammy skin. Half a dram of whiskey was now administered hypodermatically every twenty minutes. This was kept up for about three hours; by this time the little patient was breathing almost naturally, pulse good, and general condition greatly improved. Subsequent recovery was uninterrupted. The features of interest in the case are: The enlarged tonsils, more or less interfering with satisfactory examination and concealing the nature of the more deeply-seated disease; the entire absence of difficulty in swallowing; and the swelling in the neck. The latter was, doubtless, a suppurative lymphadenitis, deeply situated, and taking a course internally toward the pharynx, instead of externally toward the skin. This explanation of the origin of the pus is in accord with the writings of Bosworth, and seems much the most probable. There was no disease of the cervical vertebræ.

III. COUGH AND "SUFFOCATIVE SPELLS" DUE TO ENLARGED LINGUAL TONSIL.

The following case is, perhaps, worthy of report, not from its rarity, but from the presence of a troublesome symptom due to a cause likely to be overlooked:

Miss R., about twenty-five years of age, consulted me on account of violent spells of coughing, which came on every night when she went to bed, and were attended by a feeling of constriction—a "suffocative feeling" she described it—originating in the left side of her throat. These symptoms had lasted for years, and have given her great annoyance. There was no pain, or difficulty in deglutition, nor any undue inclination to swallow—"empty swallowing," as it has been aptly termed. Examination of nose and pharynx revealed nothing abnormal. The larynx was healthy; but at the base of the tongue on the left side, overhanging and slightly catching the epiglottis, was a nodule of enlarged adenoid tissue. The destruction of this by the galvano-cautery gave entire relief from the cough and other symptoms.

MEDICAL PROGRESS.

Cancrum Oris, with Recovery.—COUSINS (*British Medical Journal*, No. 1684, p. 739) has reported the case of a child, ten years old, in which a severe and prolonged attack of enteric fever was followed by destructive ulceration of the right cheek. The resulting perforation was as large as a five-dollar gold piece; its edges were extremely thin; and several teeth were visible through the opening. The dense cicatricial tissues bound the maxillæ firmly together, and the buccal cavity was completely obliterated. The jaws were so tightly closed that the child was fed only with difficulty through a gap between the teeth. Bedsores had formed over the hips and sacrum. After a few weeks of careful treatment these began to heal and the general condition of the patient improved considerably. A false joint was then made in front of the line of adhesion, by subcutaneously dividing the lower jaw and excising a small wedge of bone from the lower border. Three weeks after the operation, solid food was taken readily and mastication was performed with comfort. The dense cicatricial structures around the opening in the cheek were freely liberated by subsequent operations, and contraction steadily progressed. The perforation ultimately closed entirely.

The Infectious Nature of Purpura Simplex.—GRÜNING (*St. Petersburger medicin. Wochenschr.*, No. 12, Jahrg. xviii, p. 105) has reported three cases of purpura simplex

in children, three, four, and sixteen years old respectively, two of whom occupied the same room, and all of whom lived in the same house and came into frequent contact with one another. All presented high fever and profound constitutional phenomena, together with bronchitis and gastro-intestinal derangement. In all, the petechiæ appeared between the eighth and eleventh days of the attack. In two, catarrhal pneumonia developed. In one case the ecchymoses beneath the skin appeared in crops, each new crop being attended with an exacerbation of temperature; from the onset there were marked vomiting and abdominal tenderness. The second case terminated by crisis on the fourteenth day; abdominal tenderness was also present. In the third case there was also a striking parallelism between the elevation of temperature and the appearance of new spots.

A Case of Polymastia.—HILBERT (*Memorabilien*, xxvii, 3, p. 129) has reported the case of a fairly strong, yet poorly nourished man, of medium stature and masculine type, who presented four mammary glands upon the anterior wall of the chest. The normal glands were situated on a level with the fourth rib upon either side, 5⅓ inches from the median line. The areola was ¾ of an inch in diameter, the seat of brownish pigmentation, and surrounded by a single row of hairs ⅓ of an inch long; the nipple was crinkled and as large as half a pea. There was little of glandular structure appreciable. The accessory glands were situated in the parasternal line, in the sixth intercostal space upon either side, 3½ inches below and a little within the normal glands. The nipple was $\frac{1}{10}$ of an inch high and $\frac{1}{15}$ of an inch in diameter; the areola was $\frac{3}{10}$ of an inch in diameter, and was surrounded by a row of hairs. On palpation no glandular tissue was demonstrable.

The Chronic Intermittent Fever of Endocarditis.—OSLER (*Practitioner*, vol. l, No. 3, p. 181) has reported two cases, one in a man fifty-three years old, and the other in a woman twenty-eight years old, both of which were for months characterized by daily intermittent pyrexia, the temperature rising to 102.5° and 104°; occasionally preceded by a distinct rigor, but more commonly by feelings of slight chilliness. Following the pyrexia there was more or less sweating. There was progressive failure of strength, with varying intervals of improvement. The physical signs of valvular disease of the heart were present. Toward the close the embolic symptoms more usually associated with ulcerative endocarditis, together with cutaneous ecchymoses, developed. After death large vegetative outgrowths were in both cases found upon the leaflets of the mitral valve.

To Prevent the Entrance of Blood into the Mouth in Operations upon the Face, KEEN, at a recent meeting of the Philadelphia Academy of Surgery, recommended that the patient be placed upon a flat table, with the side to be operated on turned a little down; the tissues are cut through from without down to but not through the mucous membrane. All vessels are secured before incising the mucous membrane. The method is particularly applicable in cases of epithelioma requiring removal of a portion of the lip or cheek.

THERAPEUTIC NOTES.

Trional and Tetronal.—As the result of a comparative clinical study, MABON (*American Journal of Insanity*, vol. xlix, No. 4, p. 579) arrives at the conclusion that both trional and tetronal possess decided hypnotic and sedative activity. Trional appeared to be the more serviceable as an hypnotic for the insane. On the other hand, small doses of tetronal appeared to yield the best results as a sedative. As a rule, the sleep that results is calm and quieting, and resembles natural sleep. In a few instances unpleasant after-effects were noted, but they did not continue long and were not at any time alarming. The action of the heart was not depressed. In the majority of instances a dose of fifteen grains of trional given in hot milk at bedtime was sufficient, in from fifteen minutes to two hours, to produce sleep of from six to nine hours' duration and unaccompanied by dreams. The same results were obtained from a like dose of tetronal. Both drugs displayed the power in some cases of producing sleep on two consecutive nights after a single administration. The dose of trional for hypnotic purposes is from ten to thirty grains, but it is advisable to begin with fifteen grains; for a sedative effect from ten to fifteen grains at least are required, but in some patients not even forty-five grains will produce the desired effect. The dose of tetronal for hypnotic purposes is from five to thirty grains, but in the majority of cases fifteen grains will be required. For a sedative effect five or ten grains, once or twice a day, will generally prove beneficial.

Nitro-glycerin for Vomiting.—HUMPHRIES (*British Medical Journal*, No. 1683, p. 693) reports having employed nitro-glycerin systematically for three years in all forms of vomiting encountered, with highly satisfactory results. In cases of gastric catarrh, in the adult or in the infant, acute or chronic, dependent upon alcoholism or upon anemia, it acted almost as a specific. It also proved useful during pregnancy. In peritonitis alone it increased the vomiting, but the effect soon passed off. It proved of little value in the relief of the vomiting of pulmonary tuberculosis. In combination with catechu it acted well in several cases of lienteric diarrhea. The vomiting of influenza was also relieved by the use of the agent, which was in no instance attended by bad results.

Milk-diet in Nephritis.—From a comparative study of the utility of the milk-diet in the various forms of nephritis, RALFE (*Lancet*, No. 3632, p. 778) concludes that the best results are obtained in cases of acute or subacute nephritis in which the diuretic action of the lactose of the milk increases the flow of urine and relieves the dropsy; whilst in cases in which degenerative changes have taken place and the heart is already failing, it is better to give a more solid and more stimulating food than milk, which shall at the same time be easily assimilable and not highly nitrogenous.

Radical Cure of Hydrocele.—HALL (*British Medical Journal*, No. 1684, p. 742) reports nineteen cases of hydrocele cured absolutely by a single operation, which consisted in slitting up the scrotum and tunica vaginalis to the extent of an inch, evacuating the fluid, sewing the tunica vaginalis to the outer skin, and applying a dressing of carbolized oil.

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SATURDAY, MAY 6, 1893.

TREATMENT OF CONSTIPATION BY MEANS OF RECTAL INJECTIONS OF OIL.

IT is true that constipation is but a symptom, in so far as it is but a manifestation of some primary condition. Nevertheless, it may be the sole source of discomfort or illness in an otherwise healthy person, and as such it is worthy of individual consideration. Constipation attends many different conditions, and the therapeutic means to be employed will be dictated by the attendant circumstances.

It is important to recognize, as FLEINER (*Berliner klin. Wochenschr.*, 1893, Nos. 3 and 4) points out, that etiologically there are two forms of constipation. The one may be designated *atonic*. It depends upon deficient or tardy peristalsis, and is common in young persons of sedentary habits and in elderly persons. It is to be recognized by the presence of mucus in the stools, which are constituted of large and small, firm and dry masses. The abdomen is usually distended. The associated manifestations are, as a rule, not significant, and the general health is otherwise good. In most cases there is no actual disease; the disturbance is purely functional. In other cases atony may lead to actual paresis or paralysis of the bowel. Not uncommonly there is intestinal catarrh. Relief may be afforded by dietary measures; by the use of gentle laxatives, or of enemata of water; by hydrotherapeutic procedures; by massage or faradization of the abdominal walls; or by methodical gymnastic exercise.

The second form of constipation may be designated *spastic*. It occurs preëminently in irritable and neurotic individuals, in hypochondriacs, and in women with uterine derangement. It is dependent upon the retention of fecal masses in consequence of tonic contraction of portions of the bowel. The stools contain long, tenuous, cylindrical, and sometimes scybalous masses of fecal matter. There may or may not be catarrh of the large intestine. The condition of spasm may be brought about by chemic, thermic, or mechanic influences. It is typically seen in lead-colic; it may result from the ingestion of improper food, the abuse of purgatives, sitting on a cold surface. Under these circumstances enemata of warm aromatic infusions, as of chamomile or peppermint, do good; sedatives, like hyoscyamus and belladonna, are also sometimes useful; opium will relieve the constipation of saturnine colic.

In some cases of constipation, atony and spasm coëxist at different parts of the bowel. FLEINER has found that in cases of either category rectal injections of oil render excellent service. From twelve and a half to sixteen ounces are employed as an enema for an adult, and from an ounce to two or three ounces for a child.

In practising the injection, the individual is placed upon his back, with the hips slightly elevated; the oil, warmed to the temperature of the body, is permitted to gently flow into the bowel from an irrigating vessel held at a height of about twenty inches, through an elastic rubber tube, connected with a large nozzle with a hard-rubber, bone, or glass bulbous extremity; the procedure ordinarily occupies from fifteen to twenty minutes. The injection is repeated daily for several days; the intervals are then gradually lengthened and the quantity of oil employed reduced. It is fundamentally essential that the oil be pure; olive oil, poppy (papaver) oil, benne (sesamum) oil may be used.

The action is probably both a physical and a chemical one. The contents of the large intestine are softened and freed and the irritability of the bowel is subdued. After a time peristalsis is stimulated and evacution takes place. Little or no oil is absorbed; and, as a result of the coating of the

mucous membrane with oil, the absorption of liquid from the large bowel is interfered with and the fecal matter retains its consistency.

If the injection be followed by discomfort an enema of warm water or of an aromatic infusion should be given after the lapse of three or four hours, unless the bowels have already moved spontaneously. Such an enema will also be required in cases in which the injection of oil fails to bring about an evacuation.

In obstinate cases faradization and massage may prove useful adjuncts. In the case of patients in bed the injections are best given in the morning; in the case of walking patients, the injections are best given at night.

The rectal injection of oil is indicated when constipation results from individual peculiarity or from functional or organic derangement. When there are present irritative symptoms, colicky pains, circumscribed or diffuse inflammatory processes in the large intestine, proctitis, colitis, tuberculous or dysenteric processes, the indication is all the more urgent. The only contra-indication is furnished by cases of disease of the large intestine, with symptoms of motor irritability, in which the contents of the small intestine and unaltered bile and pancreatic juice pass far on into the colon. The treatment is indicated in all cases of mechanical obstruction of the bowel, as from the presence of tumors or cicatrices, the existence of enlargement or displacement of the uterus or other abdominal organ, of hypertrophy of the prostate gland, of adhesions or distortion of the bowel, etc. It is especially useful in anemic and poorly nourished individuals. In cases of inflammatory and ulcerative processes in the large bowel, salicylic acid, in the proportion of 1 or 2 per cent., may be added to the oil. The treatment is also efficacious in cases of membranous enteritis.

THE SANITARIUM ASSOCIATION OF PHILADELPHIA.

REALIZING the influence of intense heat, impure air, crowding, improper food and clothing, and unfavorable hygienic surroundings in the causation of the summer diseases of children, with the attendant frightful mortality, it is the especial province of the physician (whose first duty is the saving of life and the amelioration of suffering) to commend and encourage such work as has been undertaken, and is so well carried out by the Sanitarium Association of Philadelphia, whose sixteenth annual report we have before us.

The object of the Association is to furnish a place where, during the heated term, the children of the poor may temporarily, at least, escape the disease-breeding conditions to which they are exposed, and the sick may receive such hygienic and medicinal attention as they may require. This humane work is carried on at the Sanitarium at Red Bank, New Jersey, a short distance from Philadelphia, and is maintained by voluntary contributions.

The privileges accorded include a ride of a half-hour on the river, going and coming, attendance, care, food, the freedom of the grounds, the benefits of the hospital, etc. The privileges are primarily for children, but on certain days of the week the aged and infirm are invited.

Nutritious and wholesome soup, with soda biscuit, and bread and tea, is furnished to mothers and caretakers, and (except tea) to the older children, and pure milk is freely supplied to babes and young children.

On the grounds, which are well drained and provided with an adequate supply of pure water, is a hospital building, with kitchen and laundry. On the main floor of the hospital building is the dispensary, which is well supplied with medicines and other articles necessary for the care of the transient or resident sick. In addition to the main ward, with a capacity of twenty beds, there are rooms of smaller size on the upper floors, together with two permanently endowed rooms for special cases, making a total capacity of thirty-six beds ready for use. Eight rooms have been set apart for endowment; two of these have already been furnished and made ready for service. The hospital is always open for the treatment of transient cases, and also for acute cases brought daily to the grounds, and which are likely to prove fatal if the patients are not promptly removed from the city. Chronic cases are not admitted, except for a limited time.

In the first summer of the Association's activity, 9699 persons derived benefits. Last year the number to avail themselves of the privileges reached 131,893; 187 infants, accompanied by their mothers, were admitted as permanent patients; 34,800 quarts of soup, 6313 cups of tea, 189 barrels of soda biscuit, 821 loaves of bread, and 4610 quarts of milk were distributed, while the number of garments distributed among needy and insufficiently clad children on the grounds was 411. This out-

line of the work of the Sanitarium Association should be a sufficient plea with the well-to-do and the charitable to contribute generously to so worthy a cause. One thousand dollars will permanently endow a small room, set apart especially for the treatment of critical cases of sickness in infants, attended by their mothers or by competent nurses. A payment of five hundred dollars will permanently endow a bed in one of the main wards for the treatment of young infants or children belonging to the needy class. The sum of fifty dollars supports a bed for one season. Those who give promptly give doubly.

THE DUCTLESS GLANDS.

It has long been supposed that various glands, of which the actual function is unknown and which are not supplied with ducts, such as the thyroid, the thymus, the spleen, the supra-renal capsules, exert some influence upon the constitution of the blood, and they have hence been called "blood glands."

There are yet other glands that, though discharging the secretory products of their activity through external channels, also exert an important influence upon the constitution of the blood. Thus, the liver possesses a glycogenic property, and it is thought that the pancreas has a glycolytic function.

The spleen is generally believed to be concerned in the disintegration of red blood-corpuscles whose usefulness is at an end, and of converting the débris of the destructive process into materials for the generation of new red cells.

Of the function of the thymus gland we have no definite indication beyond that furnished by its relation to the life, and perhaps to the growth and development, of the fetus.

The results of clinical observation suggest that the thyroid gland has some important function in connection with the constitution of the blood. The fact that the morbid phenomena associated with removal or atrophy of the thyroid gland may be dissipated by the therapeutic employment of the gland itself, or of some preparation of the gland, indicates that it, either directly or indirectly, destroys or neutralizes, or facilitates, the elimination of some *materies morbi* circulating in the blood. The association of hypertrophy of the pituitary body with atrophy of the thyroid gland is a most interestsng observation in this connection.

The only manifestation associated with disease of the supra-renal bodies of which we have knowledge, is the symptom-complex so well described by Addison, and of which the most marked features are asthenia and pigmentation of the skin. Recent investigations have shown that, in frogs, destruction of both supra-renal capsules is fatal, death being preceded by symptoms of motor impairment. If, however, a portion of a supra-renal capsule be introduced into the dorsal lymph-sac of an animal so treated, life is for a time prolonged. If the blood of an animal dying in consequence of the removal of the supra-renal capsules be injected into a healthy animal, the latter presents paralytic symptoms, and soon dies, and investigation shows that the paralysis is dependent upon a toxic influence, exerted upon the terminations of the motor nerves.

EDITORIAL COMMENTS.

"Medicine Companies" and their Methods of Doing Business.—There are in all our cities an increasing number of medical business companies, whose methods of getting customers are outrageous and should be made legally criminal. We quote below a letter written by a certain corporation with luxurious "medical parlors," etc., to a young girl. "All diseases are successfully treated and cured." Some one should sue them for failing to do the impossible—*i. e.*, cure some incurable disease. This has been successfully done in England. What moral depravity is evident in this letter!

Dear Miss ——: Excuse us for the liberty we take in writing you, but we feel justified in so doing for, after the examination, we know you are in a terrible condition, and if you have any regard for your health and future welfare, and if you intend to marry, you are not in a condition for that. It would be disgusting to your husband for you to allow yourself to remain in the condition you are in, and as you stated you expect to get married we would advise you to have yourself placed in proper condition, and we can cure you, and make you a thoroughly healthy, hearty, and happy woman.

The terms we made you are very low, and you could not expect us to treat you for less, but we will say to you, that if you will come at once, we will treat you the first month for $20, which includes all medicine. You will not have to go to the drug-store for anything; we will furnish everything.

Using, as we do, in connection with electricity, magnetism, massage, Swedish movements, rubbing, etc., medicines made from roots, barks, and herbs into fluid extracts, there is no question but that our treatment is superior to any other method. Any letter, testimonial, or affidavit you may find published in the journal we gave you, the originals are on file at our office for your inspection.

We would like to have you bring with you, when you call, a small bottle of your urine, the first you pass in the morning; that having been in your bladder all night, shows the condition of your disease better than urine passed at shorter intervals. You will also find wrapped in journal a question sheet or blank, which we would be pleased to have you fill out, answering only those questions that pertain to your disease, and return to us. It will assist us materially in preparing your remedies.

Now, if you wish to get well, this is the chance for you. We understand our business thoroughly, and know our method is the only one to cure.

Trusting to see you at our office at an early date, we remain,

Yours truly,

The Non-operative Treatment of Strabismus.—In the *New York Medical Journal* of April 22d, Dr. Bernstein, of

Baltimore, argues against the common practice of proceeding at once to tenotomization in the non-paralytic squint of children. The non-operative treatment suggested consists in the wearing of perfect spectacles, the continued partial paralysis of the accommodation, and occasional monocular exercise of the squinting eye by bandaging the better eye. Dr. Bernstein cites most gratifying results, and we wish to add our word of encouragement to the plan. It has been found to work in private practice most admirably, and in many cases. Instead of a bandage we are accustomed to use a rubber blinder attached to the spectacle-frame, thus permitting the eye to be open. Another method we have found most serviceable is to mydriaticize the sound eye only for an occasional week or two. This is of especial use when children are too young to wear spectacles. The relief of reflex symptoms by glasses alone is also a fact of great interest, even when high heterophoria coexists. A patient under observation is wearing simple ametropic correction with twenty degrees of esophoria uncorrected, with complete relief of previous severe reflex symptoms, and with constantly strengthening muscles. We are very frequently too impertinent with our surgery, and if we would only give the natural recuperative powers an opportunity and the means of self-cure, we would bring about correction by normal and easy methods. As Dr. Bernstein courteously says, the treatment he advocates is in accord with the method of treating argamblyopia proposed in THE NEWS of December 31, 1892.

Medicamentous Exanthems.—We have no explanation of the idiosyncrasies to certain drugs displayed by various persons. We do not know why in some urticaria develops after the eating of certain kinds of fish or fruit; why in some persons, quinine, antipyrin, salicylic acid, copaiba, iodin, bromin, and other drugs give rise to cutaneous exanthems; why in some persons opium acts as a stimulant, and so on. A most remarkable instance of idiosyncrasy to opium has recently been reported by LANZ, in the *Monatshefte für praktische Dermatologie*, Bd. xvi, No. 7, p. 309. On each of three occasions, after taking two doses of 5 grains of the official powder of ipecacuanha and opium or 5 drops of tincture of opium, there occurred in a woman of twenty-nine, with subacute bronchitis, repeated chills, with feverishness; headache; redness and dryness of the skin, with itching, formication, a sense of tension and the formation of fissures; the mucous membrane of the mouth became red and dry, the appetite impaired; thirst was increased; there was sleeplessness; the pulse was rather slow; the temperature remained normal, and the urine presented no abnormality. With the withdrawal of the medicament the symptoms gradually subsided, the affected portions of the skin desquamating in great flakes.

Keeleyism.—The article on "Some of the Results of the Keeley Methods of Treatment," presented in this number of THE NEWS, is to be particularly commended to the prayerful consideration of Rev. Jenkin Lloyd Jones, of Chicago, Rev. Dr. Talmage, and all the other Right Reverends and philanthropists who have used their pulpits and official positions to help the company to make its millions of dollars. If so great a showing of the evil consequences can be gained by a little effort from a very few physicians, what would be the results if all would or could testify, and if all were known! From the very nature of the case the unfortunates and their friends must keep the great majority of instances of relapse, suicide, and insanity from coming to public notice. It is a sad history, however viewed.

Street Sweepings and Rubbish.—There are three principal methods of disposing of city refuse: 1. To throw it into the adjacent streams or ocean. 2. To build houses upon it. 3. To utilize it. Naturally we careless and wasteful Americans choose the methods most expensive to the purse and to the health; we pollute our waters or building lots with what should be to us a source of profit. We are exhausting the nitrogen of our soils, while we import fertilizers from great distances, and waste, or worse than waste, the locally produced fertilizers, animal excreta and other products. In other countries the city secures a profit, and so does the garbage-contractor, by utilizing the wealth that we expensively waste in sowing it into our rivers and made-grounds, as excellent seeds for breeding luxurious crops of—disease.

Conduct of the Medical Life.—The University of Pennsylvania Press has published two lectures by Dr. S. Weir Mitchell, delivered to Philadelphia medical students, on the "Conduct of the Medical Life." They should be put into the hands of every undergraduate, and indeed of every graduate, in the land. Virility and gentleness are here commingled in a charming manner, and the wise counsels of a wise man are urged with the persuasiveness derived from a ripe experience and from a sentiment of genuine love for the young physician and for his profession. The lectures are published for the benefit of the Students' House and Club of the University, and we hope they may be read by many thousands. Truer and wiser advice could hardly be given.

A Human Being with a Horse-mane.—There is travelling around the world, exhibiting herself, a young woman of twenty, who has growing from the spine, for a distance of eight inches from a point three inches below the hair of the head, a mane of hair about ten inches long and of the same brown color as the hair of the head. Upon being presented to the Anthropological Society of Berlin, Virchow discovered that the skin from which the abnormal hair grew covered an occult spina bifida.

The Annals of Ophthalmology and Otology appears in a new typographical dress much to be praised, offers the readers a noteworthy array of original articles, and announces that, beginning with the July issue, each number will contain 128 pages of reading matter. These evidences of success and of appreciation on the part of the profession must be very gratifying to our enterprising and excellent young contemporary.

University of Vienna.—During the session of 1892–93 there were 2879 students in medicine at the University of Vienna. Of this number 418 were foreigners. The largest contingent of these were Russians, of whom there were 94; 89 were from the United States; 11 from England. Spain was the only European country not represented. Three students were from Asia. There were none from Africa.

Substitution.—A physician of Washington, D. C., lately sent a prescription to twenty different drug-stores for a special preparation, designating a particular manufacturer's brand. Only seven were filled as directed.

SOCIETY PROCEEDINGS.

TWENTY-SECOND CONGRESS OF THE ASSOCIATION OF GERMAN SURGEONS.

Held at Berlin, April 12, 13, 14, and 15, 1893.

[Reported for THE MEDICAL NEWS by JULIUS FRIEDENWALD, M.D., of Baltimore.]

THE Association of German Surgeons began its twenty-second session, at Berlin, on April 12th, at its handsome building, the Langenbeck-haus, which was dedicated at the meeting a year previously. The interior of the building presented a brilliant appearance; the lower rooms being filled with an exhibit of the latest surgical appliances, while in the large auditorium, in the upper story, were congregated many of Germany's greatest surgeons. Among others were: Esmarch (Kiel), Trendelenburg (Bonn), Bruns (Tübingen), Czerny (Heidelberg), Mikulicz (Königsberg), Schede and Lauenstein (Hamburg), and v. Bergmann (Berlin).

KŒNIG, of Göttingen, presided, and opened the session with a few words of welcome, after which CZERNY was elected vice-president. After the reading of the reports of the secretary and treasurer,

VON BERGMANN presented a man from whose liver he had extirpated a tumor. The fear of surgical interference in the treatment of diseases of the liver, he stated, has disappeared, and especially since the last Congress, when Ponfick (Breslau) had shown by experiments on animals that bloody operations upon the liver are relatively harmless, and that the structures removed by the knife are in part replaced by connective tissue. He has removed a malignant adenoma of the liver of a man, recovery ensuing within five weeks. Müller (Aachen) remarked that he had extirpated a soft tumor of the liver—a biliary cyst—so large that six liters of fluid were emptied at the operation. The patient, who had suffered with the trouble for ten years, recovered in four months after the operation. Bardeleben, Czerny, Küster, and Kœnig took part in the discussion, and all agreed that while the technique of operations upon the liver is difficult, especially in regard to the control of hemorrhage, nevertheless the prognosis is better than that of operations upon many other organs, even when the removal of malignant tumors is considered.

HOFFA (Würzburg) reported on the "Operative Treatment of Congenital Dislocations of the Hip joint." For this severe and disfiguring deformity there is at present no satisfactory treatment. The best of all is Kœnig's method. According to the new plan of Hoffa, after laying open the hip-joint the contracture is overcome partly by stretching, and even by severing, certain tendons; and the head of the femur is forcibly moved into its socket. Hoffa has operated in twenty-six cases of this kind, and by a number of patients he demonstrated that the waddling gait and lordosis, which always accompany congenital dislocation of the hip-joint, had almost disappeared. In the discussion Kœnig admitted the superiority of this operation over his own.

GURLT read statistics on "Anesthetics," which he had collected at the request of the Association. To his inquiries during the year fifty-eight observers had returned reports. Among these a number were from foreign countries. In all, the report covered 57,541 anesthetizations, of which 11,464, effected with nitrous oxid gas, came from the dental department of the University of Berlin, and were left out of consideration. The remainder, added to the number collected in the previous two years, made a total of 157,815 anesthetizations, with 53 deaths; that is, 1 to 2900 anesthetizations. Taken singly, the proportions of deaths from the various anesthetics are: 1 to 2899 with chloroform; 1 to 4118 with chloroform-ether; 1 to 4538 with ethyl bromid, and 1 to 199 with pental. With pure ether, thus far, of 14,506 anesthetizations, not a death has occurred. The same can be said of Billroth's mixture of chloroform and ether. Although no conclusion can as yet be drawn from these statistics, a marked preference for ether is shown. Küster and Trendelenburg, who were formerly advocates of the use of chloroform, expressed their preference for ether as the better anesthetic. Kœnig and Bardeleben, however, still prefer chloroform. In the discussion, Kœnig recommended that in those cases in which heart-failure occurred during anesthetization, recovery could be frequently brought about by rhythmic blows on the chest in the region of the heart.

HELFERICH (Greifswald) read a paper on "Bow-shaped Resections in the Treatment of Ankylosed Knee-joints." According to this procedure there is but a small loss of bone-substance, and, therefore, but little shortening of the limb, which is a great advantage over former methods.

BIER (Kiel) showed several patients with amputations of the leg performed according to a new method. The difficulty and pain of walking on an artificial limb, on account of pressure on the stump, is obviated by bending the lower end of the stump at right angles to the leg, and so producing a form of foot to which an artificial limb can be fastened without discomfort. This procedure is, of course, only possible when a considerable part of the tibia is left.

KÜSTER (Marburg) and JULIUS WOLFF (Berlin) presented cases in which their operations for cleft-palate had been performed successfully. The former mentioned his method of uranoplasty. Considerable discussion arose as to whether an early operation, as practised by Wolff (as early as the fourth month of infancy), or a later operation, between the ages of five and seven years, were more proper. Wolff believed that by his method the children learn to speak more distinctly. Küster claimed the opposite.

The first day's session was closed by an address by CZERNY, on "The Removal of the Uterus Through a Sacral Opening." The sacrum is partially removed, and through the opening the uterus is extirpated. Although he seems to have had but little success with the operation, Czerny claims much for the simplicity and ease with which it can be performed.

The second day's session was opened with the demonstration of a new thoracometer by VON HEINLETH (Hamburg), who was followed by KARG (Leipzig) with

a demonstration of glass-microphotograms of pathologic specimens.

BRAMANN (Halle) spoke next on "The Treatment of Gunshot Wounds of the Abdomen," for which he recommends early celiotomy, and presented cases which he had treated successfully. He also related a number of cases of trephining of the skull.

HAHN (Berlin) reported the case of a butcher, thirty-five years old, previously in good health, who had indulged in alcohol to excess, and who noticed that his eyesight was becoming considerably impaired. The condition gradually became worse, until finally he was entirely blind in one eye; and to this was added impairment of hearing and smell, with loss of memory, and headache. Cysticercus of the brain was thought of, and the following operation performed: A square-shaped piece of bone was chiselled from the frontal region, and the tense dura mater was opened. A portion of brain-substance that protruded was excised, but was replaced by more brain-tissue. The conclusion was reached that the bulging must have been due to intra-ventricular pressure, whereupon a long hypodermatic needle was thrust into the ventricle and 100 c.c. of watery fluid withdrawn; the brain-substance receded at once, and the wound could be easily closed. Recovery was complete, with the exception of the blindness in one eye. Whether the trouble was really due to a cysticercus or not could not be determined.

NICOLAI (Frankfurt a. O.) related the case of a soldier, who, while loading manure, was accidentally injured by the penetration of a pitchfork into his left parietal bone. The man was at once rendered unconscious. The wound was cleansed of all foreign matter, and the opening in the bone enlarged, and healing took place satisfactorily. Nevertheless, right-sided hemiplegia, with loss of memory and symptoms of aphasia, remained. A secondary operation was decided upon, and a spicule of bone penetrating into the brain removed; whereupon perfect recovery took place.

STENZEL (Küstrin) also reported a case of trephining for fracture at the base of the skull.

KRAUSE (Altona) reported 21 cases in which he had obtained good results from the transplantation of large skin-flaps from the arm upon indolent ulcers of the leg, while LAUENSTEIN (Hamburg) presented a case in which a large area of destruction of the cheek had been refilled by means of skin removed from the breast, a pedicle being left for a time.

Several demonstrations then followed—among which were an improved apparatus for the treatment of pronounced spinal curvatures, by SCHEDE; abnormally high position of the scapula in two cases with perfectly normal spinal column, by SCHLANGE; and a case of choledochotomy for gall-stones, by KOERTE. Finally, SCHULZE-BERGE (Oberhausen) read a paper on the cure of trigeminal neuralgia by the stretching of the facial nerve. In the discussion Esmarch remarked that it was doubtful whether the deformity caused by this procedure was not really as serious as the neuralgia itself.

The third day's session opened with a demonstration by BARTH (Marburg) of kidney changes after nephrotomy, and one by SCHEDE (Hamburg) of the value of deep-seated wire sutures in celiotomies and in radical operations for hernia. The preparations showed that the wire sutures remained imbedded in the cicatrix without causing inflammation.

SCHIMMELBUSCH, of Berlin, presented two cases in which there had been a defect of tracheal structure, with loss of voice. The first case was in a girl nine years old, in which a defect of 3.5 inches in length existed in the tracheal cartilage in consequence of a tracheotomy after diphtheria. In spite of numerous attempts at plastic reparation, a large opening still remained, as a result of which there was entire loss of voice. The child discovered, however, that by forward movement of the head the opening could be closed and speech produced. In the second case, in a girl thirteen years old, the opening was much larger than in the first. A part of the sternal periosteum was removed and placed over the defect. The wound healed favorably, and the patient is now able to speak again. The case is remarkable from the fact that the child had not been able to speak for ten years.

EISELSBERG (Vienna) presented a valuable paper on disturbances caused after the total extirpation of the thyroid gland in sheep. When this gland is removed from young animals, a lack of development results; the animals remain small and physically undeveloped.

NEUBER (Kiel) then read a paper on asepsis and artificial methods of producing "bloodlessness" of a limb. He recommended the use of the wet linen bandage for this purpose instead of the usual Esmarch bandage.

BARDELEBEN, in discussion, pointed out the fact that he had recommended the use of the wet bandage many years ago. He, however, applies the bandage in a dry condition and then adds water, in consequence of which shrinking takes place, and the compression of the part is rendered more thorough.

SONNENBURG showed interesting preparations demonstrating the filling of bone-cavities. To fill large bone-cavities, as after surgical operations, plaster has been recently recommended. This has, however, the disadvantage of not being a disinfectant, so that there is a possibility that bacteria may grow between the plaster and the bone. For this reason Sonnenburg has followed the custom of dentists and has used disinfected fillings, especially those consisting of zinc and copper amalgam. The experiments had been carried out on dogs with excellent results. Recently the method had been practised on a patient.

BRAMANN demonstrated patients on whom the covering of large skin-defects of the extremities had been accomplished by means of pedunculated skin-flaps. All of the cases were aggravated ones, and amputation was considered in the event of the failure of the method. The flap for the hand was taken from the breast; that for the foot from the leg of the other side.

At this session, ESMARCH was elected President of the Association for the ensuing year.

The fourth and last session of the Congress was opened by SCHIMMELBUSCH (Berlin), with an address on "The Disinfection of Wounds." To investigate the influence of pathogenic microbes on the surfaces of wounds, and to observe whether it be possible to destroy these by disinfection, he had made a number of experiments on animals in Bergmann's clinic. Cultures of anthrax-bacilli, streptococci, etc., were placed on wounds, which were immediately thereafter disinfected. Notwithstand-

ing the use of the strongest disinfectants, it was impossible to prevent the animal from being infected. These experiments demonstrate the importance of exercising great care in the treatment of wounds, especially during operations. The organisms pass into the tissues with great rapidity, so that disinfection practised even very soon after infection has taken place is not able to destroy them. Schimmelbusch referred to the experiments of French investigators, who inoculated horses with glanders, and sought by immediate disinfection of the wound to prevent infection, but without success. Experiments were also carried out with mice. If the tail, inoculated with anthrax-cultures, was not amputated within ten minutes after inoculation, the animals died of the disease.

Messner (Munich) next presented a paper on the bursting of cold abscesses (tuberculous) through the thoracic walls into the lungs or bronchi.

Bramann read a paper on empyema.

Gleich (Vienna) described a new method for the treatment of "flat-foot." The calcaneum is sawed from its upper posterior to its lower anterior part obliquely, and the lower section is pushed forward and allowed to heal. The use of the foot is restored, but the length of the leg is somewhat increased. This method is practised in Billroth's clinic.

Julius Wolff presented cases of osteoplastic operations performed according to his own method.

Barth (Marburg) demonstrated his histologic studies on bone-implantation. He has come to the conclusion that implanted bone-pieces do not really regenerate, but die, and by their presence form a bridge over which new bone is deposited from the periosteum and adjacent parts.

Bork (Rostock) demonstrated a specimen of obturator hernia; Wohlgemuth (Berlin) a new tracheotomy canula, and Koerte spoke of obstruction of the bowels by gall-stones.

CORRESPONDENCE.

SANITATION IN PHILADELPHIA.[1]

Office of the Board of Health, City Hall,
Philadelphia, April 21, 1893.

To the Editor of The Medical News,

Sir: Active efforts have been made to prevent cholera the coming season. So far as quarantine is concerned, the Federal authorities have established a station at the Delaware Breakwater, which is fitted up with barracks, hospitals, disinfecting-apparatus, cremating-furnace, etc. There is ample accommodation there for treating the sick and for detaining "suspects" and for purifying articles on shore, but it is impracticable to disinfect vessels in the open sea most of the time. Therefore, arrangements have been made for fitting up a disinfecting station at Reedy Island, and it is the determination of the Federal quarantine-authorities to have this station in readiness early in the season. In addition to these facilities we have, as you know, the Lazaretto Quarantine-station at Tinicum, which is complete in all respects as a quarantine-station, with the exception of a wharf close to the deep-water channel with disinfecting-apparatus, which had been arranged for, so as to facilitate the treatment of vessels. I would like it to be understood that we have disinfecting-apparatus, but it is not advantageously situated. When the Government station at Reedy Island is equipped there will not be the same necessity for disinfection and cleansing of vessels at the Lazaretto. We believe that the river and bay will be well protected, and that the approach of cholera by way of the Delaware basin will be guarded against.

The effort is being made, and will be continued, to put the city in a thoroughly clean condition. This work must be performed by the authorities, with the full coöperation of citizens. The streets, alleys, public places, will be thoroughly cleansed and kept clean. A very large number of small streets, in the least sanitary portions of the city, will be paved with asphalt or some smooth impervious pavement. A large sum of money will be expended for this purpose. Garbage is to be transported beyond the limits of the county. In the lower section of the city, namely, all south of South Street, the garbage is now being incinerated in a very successful manner by a new process. The keeping of hogs has been prohibited, and nuisances resulting therefrom in connection with the feeding of garbage to the animals will not occur this season.

An extensive house-to-house inspection has already been commenced in those districts in which cleanliness does not prevail. This inspection will be broadened by the addition of inspectors, and it is proposed to continue it throughout the spring and summer. You will notice by the papers that citizens have been urged to turn their attention to house-cleaning immediately, and to lend their coöperation with the authorities, so that everything will be in excellent sanitary condition. Already a very considerable amount of work has been accomplished. The Health Officer states that recently he has cleaned alleyways in the rear of over five thousand houses.

The aid and coöperation of the entire police force, numbering over 2000 men, have been secured in promoting general cleanliness. The police have been instructed to note carefully the condition of the streets and public places and of alleyways, courts, yards, and lots, and make daily reports of any offence against sanitary laws, which reports are analyzed and referred to the appropriate bureau for action.

In regard to the water-supply I have very little to say that is new. A change in the quality of the water-supply cannot be brought about quickly. So long as we derive the supply from the Schuylkill watershed we may expect to have a defiled water poured into our basins, and it is therefore most necessary that provision should be made for subsidence and filtration upon a very large scale. This has been done in foreign cities and in some places in this country with great improvement to the supply, and can be done in Philadelphia, and should be done, and done promptly. The water-supply, as at present derived, tends to become less and less wholesome, while the means of improvement referred to are neglected. As a measure of primary importance to the public health, arrangements should be entered into for securing water from a source less liable to pollution, say from above the Delaware

[1] The foregoing letter from the President of the Philadelphia Board of Health has been received in response to an inquiry from the Editor, who is grateful for the courtesy thus shown.

Water Gap, where the watershed could be controlled by the municipality and placed under watchful supervision. The Mayor and the Director of Public Works are both intensely interested in this subject, and anxious to have measures set on foot looking toward improvement in the quality of the water supplied to the citizens of Philadelphia. As a temporary and safe expedient, we recommend that citizens boil all water used for drinking-purposes, and during the coming summer we shall continually urge this means of protection.

Yours very truly,

WILLIAM H. FORD, M.D.

DR. FREIRE'S YELLOW-FEVER INOCULATION.[1]

To the Editor of THE MEDICAL NEWS,

SIR: In reply to Dr. George M. Sternberg (MEDICAL NEWS, April 8th, p. 389), I have only to draw the attention of your readers to the following points. Referring to the year 1885, Dr. Sternberg says: "Dr. Freire has included in his list 1294 persons who were vaccinated during the healthy winter months of June and July, and who were exposed during the preceding comparatively unhealthy months of January, February, March, and April. If these 1294 individuals were protected from an attack of yellow fever by inoculation practised in June and July, what protected them from being attacked during the preceding epidemic season?"

This question loses all its point when Dr. Sternberg is reminded of his own figures showing that in the entire population of Rio de Janeiro there were only 278 deaths from yellow fever during the year 1885, to the early part of which he refers as the preceding season. Readers should take into account this fact, and that in the subsequent year, 1886, there were 1397 deaths from yellow fever in that city.

Looking further, we read: "It is a significant fact that, of the 3051 vaccinated prior to August, 1885, Dr. Freire has only 1 fatal case to report, while out of 460 vaccinated in January and February, 1886, he reports 5 deaths, a mortality of more than 1 per cent., which he gives as the general mortality among those vaccinated. That is to say, the mortality among those vaccinated during these two epidemic months was more than 1 per cent. On referring to the mortality of the city for the same two months, he remarks: "I find the total number of deaths to have been 369, which, in a total susceptible population of 160,000 (Dr. Freire's estimate), would give a mortality of 1 in 436."

That figures do not lie may be true when a calculation is correctly made, but Dr. Sternberg is in slight error in his statement as given in the foregoing figures.

In qualification, he goes on to remark: "That is, the mortality among those vaccinated during these two months of epidemic prevalence of yellow fever was very much greater than among the non-vaccinated portion of the population."

This is the climax of Dr. Sternberg's array of figures against the statistics of Freire: that more of his inoculated cases died in a given period than the proportion of deaths from all causes amongst the population of the entire city, including, of course, in the general result, those identical cases laid at the door of Domingos Freire.

Unless it is alleged in the declaration of charges against the process of inoculation adopted by Freire, that it actually increased the mortality of those subjected to it, we cannot accept the verdict of Dr. Sternberg that the mortality among those vaccinated during these two months of epidemic prevalence of yellow-fever was very much greater than among the non-vaccinated portion of the population.

It is in order to give a report in this connection of some of the missionaries from the United States in Brazil as to the consequences of yellow fever inoculation. Five ministers of the Gospel have died from yellow fever in Brazil within a few years, who, to say the least, failed to be inoculated, viz., Messrs. Koyer, Thompson, Dabney, Pinkerton, and E. Lane. On the other hand, Dr. H. M. Lane was inoculated and has often been exposed, without suffering from yellow fever.

Yours very truly,

J. McF. GASTON, M.D.

ATLANTA, April 12, 1893.

[1] This letter has been unavoidably crowded out of the last two issues of THE NEWS. [Ed. THE NEWS.]

NEWS ITEMS.

The Section of Diseases of Children of the American Medical Association has issued the following preliminary program:

June 6th, Afternoon Session.—Address of the Chairman, "Some Recent Advances in Pediatrics," by C. G. Jennings, Detroit, Mich.; "Observations on Isolated Cases of Diphtheria," by W. A. Dixon, Ripley, Ohio; "Some Observations in Treating Cases of Diphtheria," by G. Benson Dunmire, Philadelphia, Pa.; "Presentation of Aseptic Intubation Instruments, with Statistics of Intubation," by F. E. Waxham, Chicago, Ill.; "The Therapeutics of Diphtheria," by F. E. Waxham, Chicago, Ill.; "Observations Relating to Diphtheria," by J. Lewis Smith, New York City, N. Y. Discussion of "Diphtheria" opened by C. W. Earle, Chicago, Ill.; V. C. Vaughan, Ann Arbor, Mich.; Joseph Eichberg, Cincinnati, Ohio; J. A. Larrabee, Louisville, Ky.; E. Fletcher Ingals, Chicago, Ill.; William P. Munn, Denver, Col.

June 7th, Morning Session.—"The Pathogenesis of Bronchitis," by W. S. Christopher, Chicago, Ill.; "The Pathology and Symptomatology of Acute Bronchitis and Broncho-pneumonia," by C. L. Dodge, Kingston, N. Y.; "Some Phases of Broncho-pneumonia in Children," by J. M. G. Carter, Waukegan, Ill.; "The Pathology and Symptomatology of Croupous Pneumonia," by F. S. Churchill, Chicago, Ill.; "The Therapeutics of Bronchitis," by I. N. Love, St. Louis, Mo.; "The Therapeutics of Broncho-pneumonia," by F. S. Parsons, Northampton, Mass.; "The Therapeutics of Croupous Pneumonia," by J. A. Larrabee, Louisville, Ky. Discussion opened by F. Forchheimer, Cincinnati, Ohio; Heneage Gibbes, Ann Arbor, Mich.; B. A. Waddington, Salem, N. J.; Edward W. Wells, Chicago, Ill.; James B. Herrick, Chicago, Ill.; Marion Thrasher, San Francisco, Cal.; William Perry Watson, Jersey City, N. J.

June 7th, Afternoon Session.—"Some of the Sequelæ of Pertussis," by B. A. Waddington, Salem, N. J.; "The

Treatment of Chorea by Large Doses of Quinine," by W. A. N. Dorland, Philadelphia, Pa.; "Insane Disorders of Children—Their Extra-Asylum Treatment," J. Madison Taylor, Philadelphia, Pa. Discussion opened by C. B. Burr, Pontiac, Mich.; F. W. Mann, Detroit, Mich. "Acute Endocarditis of Children—Etiology, Symptomatology, and Treatment," by C. N. Highley, Conshohocken, Pa.; "Chronic Endocarditis in Children—Pathology, Valvular Lesions, Symptomatology, and Treatment," by M. P. Hatfield, Chicago, Ill.; "Pericarditis in Children—Etiology, Pathology, Symptoms, and Treatment," by William Perry Watson, Jersey City, N. J. Discussion opened by I. N. Love, St. Louis, Mo.; J. M. Keating, Colorado Springs, Col.; J. Lewis Smith, New York City, N. Y.; B. A. Waddington, Salem, N. J.; and J. A. Larrabee, Louisville, Ky.

June 8th, Morning Session.—"Phenomena and Causes of Gastro-enteric Fever (not Typhoid)," by J. Wellington Byers, Charlotte, N. C.; "The Importance of Early Effective Elimination in the Zymotic Diseases of Children," by J. A. Work, Elkhart, Ind. Discussion opened by V. C. Vaughan, Ann Arbor, Mich. "Dentition and Some of its Diseases," by Marion Thrasher, San Francisco, Cal.; "Artificial Feeding of Infants," by George C. Mosher, Kansas City, Mo.; "Cholera Infantum—Its Treatment in Malarial Localities," by L. Schenck, Mt. Carmel, Ill.; "Milk-infection," by V. C. Vaughan, Ann Arbor, Mich. Discussion opened by W. S. Christopher, Chicago, Ill.; E. F. Brush, Mt. Vernon, N. Y.; M. P. Hatfield, Chicago, Ill.; W. A. Dixon, Ripley, Ohio.

June 8th, Afternoon Session.—"A Case of Laryngeal Stenosis Complicating Scarlatina, with Remarks on Treatment," by J. A. Wessinger, Ann Arbor, Mich.; "Primary Syphilis and Gonorrhea in Children," by B. M. Ricketts, Cincinnati, Ohio; "Atresia Oris," by Edward Borck, St. Louis, Mo.; "Etiology, Morbid Anatomy, and Treatment of Infantile Hernia in the Male," by Thomas H. Manley, New York City, N. Y.; "Hernia in Children," by W. E. Wirt, Cleveland, Ohio. Discussion of Hernia to be opened by C. B. Nancrede, Ann Arbor, Mich.; DeForest Willard, Philadelphia, Pa.; F. W. Robbins, Detroit, Mich.

The American Gynecological Society will hold its Eighteenth Annual Meeting in the College of Physicians, Philadelphia, May 16, 17, and 18, 1893. The following program has been arranged:

First Day, May 16th, Morning Session at 9.30 o'clock.—Address of Welcome, by the President, Dr. Theophilus Parvin; "Abdominal Fistula after Celiotomy: Its Prevention and Treatment," by Dr. Paul F. Mundé, of New York; "A New Operation for Uterine Fibroids, with Report of Cases," by Dr. Franklin H. Martin, of Chicago; "A Further Report upon Supra-vaginal Hysterectomy by the New Method," by Dr. B. F. Baer, of Philadelphia; "Two Cases of Supra-vaginal Hysterectomy by Baer's Method," by Dr. Archibald McLaren, of St. Paul; "Congenital Dilatation of the Urethra," by Dr. William H. Baker, of Boston.

Afternoon Session at 3 o'clock.—"Operations upon the Uterine Appendages with a View to Preserving the Functions of Menstruation and Ovulation," by Dr. William H. Polk, of New York; "The Treatment of Septicemia with Oxygen," by Dr. Andrew F. Currier, of New York; "Puerperal Eclampsia: the Experience of the Boston Lying-in Hospital during the Last Seven Years," by Dr. Charles M. Green, of Boston; "A Case of Inversion of the Uterus," by Dr. Edward P. Davis, of Philadelphia; "Ovarian Tumors Obstructing Pregnancy," by Dr. A. F. A. King, of Washington; the President's Address will be delivered at 8 P. M.

Second Day, May 17th, Morning Session at 9.30 o'clock.—"Membranous Dysmenorrhea," by Dr. Thaddeus A. Reamy, of Cincinnati; "The Operative Treatment of Uterine Fibro-myomata," by Dr. Hermann J. Boldt, of New York; "The Dangers and Complications of Uterine Fibroids," by Dr. S. C. Gordon, of Maine; "Internal Crossing of the Ovum," by Dr. Henry C. Coe, of New York; "Hystero-epilepsy: Report of Seven Cases Cured by Celiotomy," by Dr. H. Marion Sims, of New York.

Afternoon Session at 3 o'clock.—"The Operative Treatment of Prolapsus Uteri et Vaginæ," by Dr. George M. Edebohls, of New York; "The Origin of Dermoid Tumors of the Ovary," by Dr. Arthur W. Johnstone, of Cincinnati; "The Pathology and Treatment of Injuries of the Pelvic Floor," by Dr. Alexander J. C. Skene, of Brooklyn; "The Elastic Ligature *versus* the Wire Serreneud in Supra-vaginal Hysterectomy," by Dr. R. Stansbury Sutton, of Pittsburg; "The Surgical Treatment of Abortion," by Dr. Egbert H. Grandin, of New York.

Third Day, May 18th, Morning Session at 9.30 o'clock.—"Clinical Report of Cases of Pyosalpinx treated by Uterine Drainage, with Subsequent Conception," by Dr. Robert A. Murray, of New York; "Vaginal Enterocele in Pregnancy and Labor," by Dr. Barton C. Hirst, of Philadelphia; "Calcified Tumors of the Ovary," by Dr. J. Whitridge Williams, of Baltimore; "The Results of Aseptic Celiotomy," by Dr. William H. Wathen, of Louisville; "The Uterine Curette," by Dr. William H. Parish, of Philadelphia.

Afternoon Session at 3 o'clock.—"Retention of Menstrual Fluid in Cases of Bicornate Uterus," by Dr. Charles J. Cullingworth, of London, Eng.; "Some Elements of Success in Celiotomy," by Dr. A. Lapthorn Smith, of Montreal, Can.; "Practical Methods in Dress Reform," by Dr. Robert L. Dickinson, of Brooklyn; "In Memoriam—Dr. A. Reeves Jackson," by Dr. Henry T. Byford, of Chicago; "In Memoriam—Dr. Charles P. Strong," by Dr. Egbert H. Grandin, of New York.

The Colonnade Hotel will make a deduction to Fellows and guests of the Society.

The American Pediatric Society will hold its Fifth Annual Meeting at West Point, New York, May 24, 25, and 26, 1893. The following preliminary program has been arranged:

May 24th, First Session, 8 p. m.—President's Address, A. D. Blackader, M.D., Montreal, Can.; "This Year's Failures in Diphtheria," M. P. Hatfield, M.D., Chicago, Ill.; "The Value of Peroxide of Hydrogen in Diphtheria," J. Lewis Smith, M.D., New York City; "Brief Notes on the Use of Antipyretic Drugs in the Febrile Affections of Children," J. P. Crozer Griffith, M.D., Philadelphia, Pa.; "A Case of Laryngeal Diphtheria," W. D. Booker, M.D., Baltimore, Md.; "Concerning the Care of the Throat and Ears of Children," W. P. Northrup, M.D., New York City.

May 25th, Morning Session, 9.30 a. m.—"Intestinal

Fever," A. Jacobi, M.D., New York City; "Report on a Revisionary Nomenclature of Gastro-intestinal Diseases," T. M. Rotch, M.D., Boston. (Discussion to be opened by L. Emmett Holt, M.D.) "Proctitis in Early Infancy," Louis Starr, M.D., Philadelphia, Pa.; "Studies of Milk from Large Western Dairies," J. M. Keating, M.D., Colorado Springs; "Pulmonary Tuberculosis," William Osler, M.D., Baltimore, Md.; "Report on the Nomenclature of Diseases of the Mouth," T. M. Rotch, M.D., Boston. (Discussion to be opened by F. Forchheimer, M.D.) "A Case of False Meningocele," Irving M. Snow, M.D., Buffalo, N. Y.

May 25th, Evening Session, 8.30 p. m.—Discussion on the "Treatment of Pertussis": *a.* Local, J. P. Crozer Griffith, M.D.; *b.* Constitutional, F. Forchheimer, M.D.; *c.* Climatic, William Osler, M.D.; *d.* Complications, Henry D. Chapin, M.D.; *e.* General Discussion. Discussion on the "Treatment of Constipation in Early Infancy": *a.* Dietetic, L. Emmett Holt, M.D.; *b.* Medicinal, C. P. Putnam, M.D.; *c.* Local, Leroy M. Yale, M.D.; *d.* General Discussion.

May 26th, Morning Session, 9.30 a. m.—"Etiology of Incontinence of Urine," B. K. Rachford, M.D., Newport, Ky.; "Meningitis Complicating Pneumonia," L. Emmett Holt, M.D., New York City; A paper (subject to be announced), Henry D. Chapin, M.D., New York City; "Treatment of Certain Forms of Anemia in Children," F. Forchheimer, M.D., Cincinnati, O.; "Some Points in Connection with the Etiology of Rhachitis," J. Lewis Smith, M.D., New York City; "Treatment of Rhachitis with the Lacto-phosphate of Lime," J. Henry Fruitnight, M.D., New York City; "Report of Five Cases of Tetany," J. P. Crozer Griffith, M.D., Philadelphia, Pa.; "Acute Scleroderma," William Osler, M.D., and L. Barker, M.D.

May 26th, Afternoon Session, 2.30 p. m.—"A Case of Erysipelas of the Scalp and Face in an Infant, Aged Six Weeks," Samuel S. Adams, M.D., Washington, D. C.; "Description of a New Incubator," T. M. Rotch, M.D., Boston; "A Case," W. P. Northrup, M.D., New York City; "A Gastric Neurosis in Childhood," Irving M. Snow, M.D., Buffalo, N. Y.

The Section in Marine Hygiene and Quarantine of the Pan-American Medical Congress has been organized with Dr. Walter Wyman as the Executive President; Dr. S. T. Armstrong, of New York, as the English-speaking Secretary, and Dr. G. M. Guitéras, of Washington, as Spanish-speaking Secretary.

Participants are requested to forward, not later than July 1st, to the Secretary of the Section, abstracts, not to exceed six hundred words each, of the papers they propose to present before the Section.

The topics that will be considered by the Section are as follows: 1. The hygiene of vessels, commercial or naval, including the questions of ventilation, heating, sanitary arrangements, the disposal of cargo so as to facilitate disinfection, food-supply, etc. 2. The medical officers of passenger vessels; methods for their selection, duties, etc. 3. The vital statistics of seamen and firemen. The question of the medical examination of crews preparatory to shipping. 4. The supervision of vessels by Government medical inspectors at ports of arrival and of departure. Codes of rules for handling an epidemic disease that breaks out on shipboard. Disinfection of passengers and crew during a voyage. Location and arrangement of ships' hospitals. 5. Epidemic and exotic diseases propagated by shipping. What diseases should be quarantined. Responsiblity of nations for epidemics: India for cholera, South America for yellow fever. Can a feasible plan be devised to totally exterminate cholera? International intervention to prevent the propagation of cholera or other epidemic diseases by pilgrimages or immigration. 6. International uniformity in quarantine-regulations. Should quarantine-officers be notaries public? 7. Arrangement of detail and equipment of quarantine-stations: *a*, inspection-stations; *b*, local quarantine-stations; *c*, refuge-stations. Methods for handling infected or suspected vessels. Interstate and inland quarantine; sanitary cordons; camps of refuge; camps of probation. Recent improvements in hospitals for infectious diseases. Railroad inspection and quarantine. Length of time vessels should be held in quarantine. Conditions that should determine proclamation of quarantine against a country. Under what requirements may passenger traffic be carried on between a port infected with yellow fever and a Southern port of the United States during the summer with the least obstruction to such traffic? What merchandise should be considered as requiring treatment if shipped from a port or place infected with cholera, yellow fever, or smallpox? 8. Methods of disinfection: *a*, persons; *b*, baggage; *c*, cargoes; *d*, vessels. Recent improvements in quarantine-appliances; steam-chambers; sulphur-furnaces. Liquid sulphur dioxid as a disinfectant. Treatment of ballast: water; solid. What time should an infected vessels be detained in quarantine?: *a*, for cholera; *b*, for smallpox; *c*, for typhus fever; *d*, for plague; *e*, for yellow fever. Methods of disposal of the bodies of those that die while in quarantine.

The Association of American Medical Colleges will hold its fourth annual session at Milwaukee, Wis., Wednesday, June 7, 1893, at 3 P.M.

E. L. Holmes, M.D., LL.D., of Chicago, Ill., will read a paper entitled "Methods of Manual Training in Medical Instruction," the discussion of which will be opened by Victor C. Vaughan, A.M., M.D., of Ann Arbor, Mich.

Dudley S. Reynolds, A.M., M.D., of Louisville, Ky., will read a paper entitled "To What Extent Should the Specialties be Taught in the Regular Course?" the discussion of which will be opened by A. Vander Veer, of Albany, N. Y.

Dr. Victor C. Vaughan, Dr. Bayard Holmes, and Dr. Perry H. Millard will present the report of the Committee on a System of Uniform College Certificates.

Bayard Holmes, B.S., M.D., of Chicago, Ill., will present the report on a System of Laboratory Bookkeeping.

The following amendments to the by-laws will be suggested:

Granting associate membership of one delegate to each recognized school of post-graduate instruction in the United States.

Granting associate membership of one delegate from each State Board of Medical Examiners in the U S.

By dividing membership into three classes, to wit: active, associate, and honorary.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LXII. SATURDAY, MAY 13, 1893. NO. 19.

ORIGINAL ARTICLES.

THE ETIOLOGY OF MEMBRANOUS RHINITIS (RHINITIS FIBRINOSA).[1]

BY A. C. ABBOTT, M.D.,

FIRST ASSISTANT IN THE LABORATORY OF HYGIENE, UNIVERSITY OF PENNSYLVANIA; FELLOW OF THE COLLEGE OF PHYSICIANS, PHILADELPHIA, ETC.

(*From the Laboratory of Hygiene, University of Pennsylvania.*)

DURING the past year or two the condition of the nasal mucous membrane commonly known as membranous rhinitis has occasionally claimed the attention of the bacteriologist, the result of whose studies has been to show that a fair proportion of cases of this relatively rare disease are of a diphtheritic character, and that diphtheria-bacilli possessing their full virulence can often be isolated from them.

These observations, in connection with the fact that this affection is commonly looked upon as non-communicable, call for certain modifications in the care of these cases—modifications concerning less the treatment than the isolation of these patients; for, in so far as I am prepared to say, the treatment received by them is that which might be, and oftimes is, profitably employed in typical pharyngeal and laryngeal diphtheria.

But, as has been said, these cases are usually not considered of a dangerous character, and are practically never isolated or prevented in any way from mingling with, and, indeed, often coming into intimate contact with healthy individuals.

They are, as a rule, seen in dispensary practice; they rarely or never present constitutional symptoms, and for these reasons they do not receive the attention that their gravity indicates. I have no positive evidence that diphtheria has ever been contracted from one of these cases, but from what we now know of them it is not improbable that this has more frequently happened than has hitherto been supposed. The comparative rarity of this disease necessarily limits the opportunity presented for its study, but the observations that have been made by reliable authorities point so directly to the diphtheritic nature of many of these cases that, when possible, it seems advisable to insist upon the bacteriological examination of all pseudo-membranous conditions of the nasal cavity that are not directly and positively traceable to other causes.

[1] Read before the College of Physicians, Philadelphia, May 3, 1893.

As results of such studies that have been made, Concetti,[1] in five cases of pseudo-membranous rhinitis obtained from two of them by culture-methods the virulent diphtheria-bacillus; in two others, a direct history of infection from one case to the other, with, in one of these latter cases, subsequent diphtheritic paralysis; while in the fifth case there was a secondary appearance of a membranous condition in the larynx. In all five cases the course was chronic, and, with the exception of the last case, was limited to the nose.

Stamm[2] examined, by bacteriological methods, four cases of typical membranous rhinitis, and found in all of them the virulent bacillus diphtheriæ.

Baginsky[3] describes two cases of membranous rhinitis, both of which ran a benign course, and from both of which the bacillus diphtheriæ was obtained by culture-methods.

In his elaborate researches upon diphtheria and allied pseudo-membranous inflammations, Park[4] gives the results of analysis of six cases of the disease. In all of these cases the Klebs-Loeffler bacillus was present—in five of them in relatively large numbers. As is usually observed, these cases ran a benign course, and no history of infection was obtained from any of them.

During the past nine months we have had an opportunity of examining three cases of membranous rhinitis, in all of which the disease was limited to the nasal cavity. For the first case we are indebted to Dr. B. Alexander Randall, of this city, who saw the child in the dispensary service at the Children's Hospital, and kindly permitted us to make an examination of a portion of the membrane removed by him. The clinical history of the case is not complete, for the child disappeared, and did not return to the dispensary. The bacteriological examination of this case, which was made by Dr. Ghriskey, revealed the presence of numerous colonies of bacillus diphtheriæ which, when inoculated into guinea-pigs, caused the death of the animals with all the usual pathological lesions commonly produced by this organism in the bodies of guinea-pigs. There was no apparent diminution of virulence, and no deviation in the morphology of these organisms, or in their cultural peculiarities, from those common to diphtheria-bacilli obtained from undoubted cases of primary diphtheria.

The two remaining cases are especially interesting

from the fact that they occurred in two children in the same family, and doubtless represent an example of direct infection from one child to the other. For these cases I am indebted to Dr. Walter J. Freeman, of Philadelphia, who has kindly supplied me with the following histories.

The first of the two cases was a girl, M. W., aged seven years, who had had trouble with the nose for six or seven weeks prior to examination. It began as a cold; there was no headache, no fever, no sore-throat. Both nares were stopped up at the time of examination by thick membranous deposits, which were so adherent that in removing a piece, epistaxis of such a degree occurred that it became necessary to tampon the anterior portion of the nose for twenty-four hours. Ten days afterward the child appeared at the clinic; the membrane had entirely disappeared under treatment, and she was pronounced well.

Three days after this first child came to the dispensary the younger sister, aged two years, was brought by the mother, who stated that one week prior to that date the child had vomited, and on the evening of that day had a fever; was without appetite; was restless at night; the breathing was heavy and the nose "stopped up." Examination of this child in the dispensary revealed the presence of membrane in both nares. There was no sore-throat nor had there been any, and the temperature was 99°.

On April the 11th, twelve days after this child first appeared at the dispensary, I had an opportunity of making a bacteriological examination of the deposit in the nose. At this time both nares contained membrane, but not sufficient to plug them completely. The breathing of the child was principally through the mouth; there was no sore-throat, and otherwise she showed no evidence of any abnormal condition. The result of the bacteriological study of the membrane from the older sister revealed the presence of the Klebs-Loeffler bacillus in large numbers. Cultures from single colonies were not only identical in all morphological and cultural respects with those of Loeffler's bacillus as obtained from a genuine case of diphtheria, but also, like these, when inoculated subcutaneously into guinea-pigs, caused death in less than forty-eight hours, the autopsy revealing the pathological lesions characteristic of these inoculations.

From the younger sister, cultures of bacilli morphologically and biologically identical with Loeffler's bacillus were obtained, but when inoculated into guinea-pigs they were found to be of much lower degree of virulence than those obtained from the older sister. They did not cause the death of the animals, but produced only a local swelling and a very temporary indisposition, from which they recovered. In confirmation of Park's observation, the cultures obtained upon the day of examination from the older sister, and which were virulent, as stated, at that time, were found after thirty days not only devoid of virulence, but indeed devoid of vitality, and it was impossible to get them to grow again, even under the most favorable conditions of cultivation. Except for the absence of pathogenic properties, the bacilli obtained from the latter case seen by me could not, by any of the means usually employed, be differentiated from the genuine virulent bacillus diphtheriæ. Two guinea-pigs were inoculated with relatively larger amounts of cultures from two distinct single colonies on the original tubes from the nose, but, as stated, they have not succumbed to the operation.

The absence of virulence from the cultures of the latter case is not entirely surprising in the light of Park's observations: who found that in the six cases of rhinitis examined by him, all of which ran a benign course, the bacilli obtained in culture were all of a low degree of virulence, though it is interesting, in view of the probability of infection from one sister to the other in my cases, that in the one there should have been virulent and in the other non-virulent organisms, otherwise identical. Whether this can be due to the prolonged efforts of the tissues in resisting invasion, gradually depriving the organisms of their disease-producing powers, or to the repeated application of disinfecting solutions to the surfaces upon which they are located, it is impossible to say, but certainly we know that particular pathogenic organisms, if subjected for only a relatively short time to the action of disinfectants, when not completely destroyed, show the effects of the treatment by reduction in their pathogenic activity.[5]

In neither of the latter two cases seen by me have I been able to obtain a history of any marked constitutional disturbance that would lead one to suspect the presence of a grave condition.

It is very interesting, but a little confusing, to find the same organisms when located at different points giving rise to such essentially different clinical conditions as are seen when their seat of activity is the tissues of the fauces, as in diphtheria, and the tissues of the nasal cavity, as in membranous rhinitis. In the latter affection constitutional expression is the exception, and the course of the disease is usually more or less chronic, while the stages through which the typical diphtheria-patient passes are too well known to require rehearsal.

The differences in virulence that are often observed in the organisms obtained from cases of membranous rhinitis, and less frequently from diphtheritic patients, may serve, in part, at least, to explain the variations that are seen in the intensity, not only of the nasal form of the disease, but in true diphtheria as well. The bacilli present in genuine

diphtheria are, with but few exceptions, highly pathogenic for certain animals, and while this is often true of membranous rhinitis, it is, nevertheless, not unusual to find organisms that are constant in morphological and cultural identity with the bacillus diphtheriæ, but which differ from this in the degree of their virulence, at times possessing this property, but in diminished intensity, and not infrequently being entirely devoid of it.

These observations undoubtedly offer another argument in support of the opinion advanced by Roux and Yersin,[6] myself,[7] and others, that the virulence of the bacillus diphtheriæ may be observed to fluctuate in the degree of its intensity; at one time possessing this property in a high degree, at another presenting a decided attenuation, and, not infrequently, a complete absence of pathogenic power; and that the virulent bacillus diphtheriæ and so-called pseudo-diphtheritic bacillus are one and the same organism; the former being most commonly concerned in the production of a grave condition, associated with constant, or nearly constant, pathological and clinical expressions, while the tissue-changes and constitutional manifestations that present themselves as a result of the activities of the latter may vary with the degree of its disease-producing power. This hypothesis, of course, finds its most favorable application to those cases of rhinitis or other mild diphtheritic inflammations of which the clinical history would *a priori* almost exclude the probability of highly virulent organisms being concerned in their etiology.

With regard to the lack of constitutional disturbance in those cases of rhinitis running the usual benign course in which virulent diphtheria-bacilli are present, it must be borne in mind that not infrequently cases of genuine laryngeal or pharyngeal diphtheria are seen from which organisms possessing their full virulence can be isolated and from which all constitutional symptoms indicative of grave disorders are absent—a condition that, in the present state of our knowledge, we feel justified in referring to an exaggerated or unusual degree of resistance offered to the invading organisms by the tissues of the individual affected; a condition of the tissues formerly vaguely spoken of as "vital activity," but now generally recognized upon experimental evidence as a potent factor in repelling the inroads of disease-producing organisms.

That the organism that we have been accustomed to know as the pseudo-diphtheria bacillus, though incapable of destroying the life of guinea-pigs into which it has been inoculated, does, nevertheless, possess the power of causing in these animals limited localized tissue-changes, indistinguishable, save in degree, from those produced by the typical virulent bacillus, is borne out by microscopic examination of the tissues at the seat of inoculation in animals into which these non-virulent forms have been introduced, but which have not succumbed to the operation; for example, of the two guinea-pigs inoculated subcutaneously with cultures from the last case mentioned by me, neither of which succumbed, and in both of which only local tumefaction occurred, one that had gone for ten days with no apparent constitutional disturbance was killed after this date. The autopsy revealed, at the seat of inoculation, a yellowish area marked by numerous hemorrhagic points and surrounded by a very limited zone of edema not over 0.5 c.m in extent. This yellowish area was firmly adherent to the overlying skin and extended into the substance of the abdominal wall. The peritoneum beneath it was slightly reddened; the inguinal gland on the side inoculated was very slightly enlarged and reddened. Upon opening the peritoneal and pleural cavities no fluid was present; the retro-peritoneal lymph-glands were neither enlarged nor reddened. The intestines were normal; the kidneys and liver were normal; the spleen was dark in color, otherwise normal; the adrenal bodies were small and pale, and upon section contained a brownish fluid; there was no excess of fluid in the pericardium, and the lungs were normal. The subcutaneous lymph-glands over the body, except those in the groin nearest the seat of inoculation, showed no change.

Culture-media (Loeffler's blood-serum and agar-agar) inoculated from the seat of inoculation, the blood of the heart, the liver and spleen, remained sterile.

Microscopic examination of sections of the seat of inoculation, hardened in alcohol and stained with fuchsin, revealed a condition in all essential respects identical with that described by Welch and Flexner[8] at the seat of inoculation of animals dead after the subcutaneous introduction of virulent cultures of this organism. There was the same emigration and destruction of leukocytes, the nuclei of many of which were conspicuously disintegrated. The nuclei of the fixed cells were also seen to be undergoing destruction. Many of the muscle-fibers were hyaline, and at places were seen to be penetrated by leukocytes. When stained by Weigert's fibrin-stain a delicate network of fibrin could easily be made out. In short, the tissue-changes were in all respects, save for a diminution in degree, identical with those produced by the virulent bacillus diphtheriæ.

For this reason we are inclined to the opinion that the term "pseudo-diphtheritic bacillus" as applied to an organism in all respects identical with the genuine diphtheritic bacillus, save for its inability to kill guinea-pigs when inoculated subcutaneously, is a misnomer, and that it would be

more nearly correct to designate this organism as the attenuated or non-virulent diphtheritic bacillus, reserving the term "pseudo-diphtheritic" for that organism or group of organisms (for there are probably several) that is enough like the diphtheria-bacillus to attract attention, but is distinguishable from it by certain morphological and cultural peculiarities aside from the question of virulence.

It is a well-known fact that many pathogenic organisms—conspicuous among these being the diplococcus pneumoniæ, the staphylococcus pyogenes aureus, and the group of so-called hemorrhagic septicemia organisms—undergo marked variations in the degree of their pathogenic properties; and yet these organisms, when found either devoid of this peculiarity, or possessing it to a diminished degree, are not designated as "pseudo" forms of these organisms, but simply as the organisms themselves, the virulence of which, from various causes, has been modified.

Another interesting point to which Park calls attention is the peculiar morphological variations that he observed in the organisms obtained by him from the six rhinitis cases that came under his observation. He states that the bacilli from the agar-agar cultures were small and often pointed, while those from the blood-serum and broth cultures were long and slender, with swollen ends. We have repeatedly noticed this condition not only in the cultures from the rhinitis cases, but from cases of genuine pharyngeal diphtheria as well. We have recently been engaged in a series of experiments upon this point, and, though they are not as yet complete, the results thus far obtained are, we think, of sufficient importance to justify mention here.

The morphology of the organism while usually described as conspicuous for its irregularity, is, nevertheless, relatively constant under one and the same condition of cultivation. That is to say, the individuals comprising the growth on blood-serum (Loeffler's mixture) are very long, irregular, sometimes clubbed, sometimes pointed at ends, and are conspicuous for the irregular manner in which they take up the staining-fluid; while the growth of the same organism on glycerin agar-agar is far less voluminous, and the individuals composing it are, as a rule, short, ofttimes not over from one-sixth to one-fifth as long as the forms seen on blood-serum; they are pointed, curved, clubbed, spindle shaped, lancet-shaped, stain more uniformly and, without exception, possess transverse markings, when stained with Loeffler's blue, that give to them the appearance of being made up of very short segments. (See accompanying figure.) It is interesting to note the transition from the one form to the other when transferred from the one to the other culture-medium. We have repeatedly isolated from cases of diphtheria the diphtheritic bacillus by Loeffler's blood-serum method and continued the pure cultivation of this organism upon blood-serum through five and six generations, in all of which practically only the long, irregular, imperfectly-staining rods could be seen, but as soon as a cultivation upon glycerin agar-agar was made from one of the generations, without a single exception, only the short segmented forms previously described would develop. Similarly, if the cultures were obtained from the throat upon glycerin agar-agar and continued through a number of generations on this medium, the transition from the short segmented to the long, irregular threads was seen within twenty-four hours after transferring them to the blood-serum mixture.

Bacillus diphtheriæ. *a*. After twenty-four hours' growth on 6 per cent. glycerin agar-agar, at 37° C. *b*. After twenty-four hours' growth on 6 per cent. Loeffler's blood-serum, at 37° C. Magnified in both cases about 1500 diameters.

All of these long, irregular forms have hitherto been referred to collectively as involution or degenerate conditions of this organism, but I cannot reconcile the voluminous development within twenty-four hours, as seen on blood-serum, the most favorable medium for the growth of the diphtheria-bacillus, with the existence of a diseased condition of the individuals of which the growth is composed. We have made these observation upon cultures obtained from five different cases of genuine primary diphtheria, from two cases of membranous rhinitis, and one culture of the so-called pseudo-diphtheritic bacillus, and find them to hold for all. To which constituent of the culture-media the peculiar and sudden transitions are due we cannot definitely say

at present, but as the work is still in progress we hope to speak positively upon this point in the near future. These points of difference are not alone of technical interest, for it is important for the clinician who employs bacteriological methods in the study of his cases to realize that at least in the case of diphtheria the morphology of the organism causing it varies with the medium employed for its isolation and cultivation, and, unless he is familiar with the appearances presented by it under the varying conditions of environment, it is possible for error in diagnosis to arise, even though the manipulation of the case and the preparation of the cultures may have been practised with all of the precautions necessary to success.

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PARTIAL MYRINGECTOMY AND REMOVAL OF THE INCUS AND STAPES FOR THE RELIEF OF THE LESIONS OF CHRONIC CATARRHAL OTITIS MEDIA.

BY CHARLES H. BURNETT, M.D.,
AURAL SURGEON, PRESBYTERIAN HOSPITAL, ETC., PHILADELPHIA.

THERE are numerous cases of chronic catarrhal otitis media—with its attendants, tinnitus, deafness, and aural vertigo—which continue to suffer and perplex their physicians, even after the nares, nasopharynx, and fauces are rendered normal, or nearly so. Therefore, after bringing the nose, nasopharynx, Eustachian tube, and throat into a normal condition, but still finding the aural symptoms little or no better, the aurist is confronted with the very important question as to what shall be done to improve the hearing, reduce the tinnitus, and abolish the vertiginous tendency.

Many methods of treating the ear at this point of its history have been suggested, chiefly for the relief of the one prominent symptom—deafness. These range from simple puncture to total excision of the tympanic membrane, and the removal of one or more of the ossicula.

Without stopping in this short article to discuss the merits and demerits of these various methods of surgical treatment, I shall present briefly the notes of some cases in which I have performed a *modified* operation, the form of which is indicated in the title of this paper. In all of the following operations, the patients were etherized and the ear illuminated by an electric forehead-lamp.

CASE I.—Mrs. T. H., of Connecticut, fifty-nine years old, has been deaf in the left ear for twenty-five years, after typhoid fever. She can hear some words in her left ear with the otophone; there is constant tinnitus; she hears loud words close to the ear. The tuning-fork is heard well *per ossa*. There is a large bulbous cicatrix—comprising the entire posterior superior quadrant of the membrana. The incus-stapes joint is plainly visible through the thin cicatrix, when it is pushed inward by the pneumatic speculum. The malleus is shown by the pneumatic speculum to be adherent to the promontory. On October 31, 1892, the patient being etherized, the thin cicatrix described was excised, and the incus-stapes articulation, with the stapedius tendon, was exposed to view. The stapedius tendon was severed; the incus was separated from the stapes by the incus hook-knife, and easily removed. The blunt stapes-hook was passed, from below, under the head of the stapes between the crura. The stapes was found to be firmly ankylosed in the oval window. Gentle traction upon the stapes brought away the head and crura only. The rest of the membrana and the malleus were left *in situ*.

On November 1st there was no reaction, no improvement in hearing, and no change in the tinnitus. On November 2d there was no reaction. The oval window was plainly visible; the foot-plate of the stapes was touched with a probe and found to be firmly attached to the oval window. The hearing this morning was better, being equal to six inches for isolated words, low tone, near the ear. The tinnitus was not lessened. On November 4th there was no reaction, though the patient had some coryza. Hearing was the same as at the last visit, viz., six inches for the voice. Tinnitus was less. On November 11th the hearing was eight inches for the voice. There was no reaction, and no signs of closure of the opening made by excision in the membrana. The patient returned to her home and I have not seen her since, though I have heard from her that the slight improvement in the hearing has been maintained, and that there has been no reaction in the ear operated upon.

CASE II.—Miss E., of Virginia, thirty years of age, was first examined in June, 1892. The patient has had nasal polypi removed; she has also had typhoid fever, and finally nervous prostration, with uterine disease, for which she has been treated. All of these maladies cover a period of the last six years. The hearing began to fail about two years previous to the time of first consulting me. There was then some slight hypertrophic nasal catarrh, for which the patient was ordered to use a spray of Dobell's solution two or three times a week.

In November, 1892, when I saw the patient again, I made the following notes: The right membrana tympani is retracted, opaque, bluish-pearl color; the incus-stapes articulation is not visible through

the membrana; there is constant tinnitus; the hearing for all sounds *per aër* = o; the tuning-fork is heard *per ossa*. The external auditory canal is very narrow.

On November 21st the patient was etherized, and the upper posterior quadrant of the membrana tympani was cut away and the incus revealed; the incus was detached from the stapes and removed from the tympanic cavity. The stapes was high-placed and not seen. Had I made the incision a little higher the stapes might have been seen, and an endeavor made to remove it.

On November 22d no reaction had taken place, and the patient volunteered the statement that the tinnitus was decidedly less, and that she could hear a little. On November 23d she heard a little better; no reaction was present, and the tinnitus was decreasing. On November 25th there was a little more tinnitus than on the 24th, but not as much as before the operation. On November 26th the patient could hear loud vocal sounds, per otophone, that were inaudible before. No tinnitus existed. On November 29th the same report was made as on the 26th instant. The patient now returned to her home. After her return home she exercised this ear, according to my directions, by having some one read to her through the otophone once or twice daily, for fifteen minutes at a time.

In December, 1892, she reported that she could hear better with the otophone, but not without it. In January, 1893, her father wrote me that his daughter could now hear reading near the right ear, unaided by the otophone, and with the voice slightly elevated. There has never been any reaction. I am unable to say whether the perforation in the membrana has been maintained. A letter in April informs me that still further improvement in hearing has occurred.

Case III.—Mrs. S., of Connecticut, aged forty-seven years, now at the menopause, has had chronic sclerotic otitis media in both ears for twenty years, beginning first in the left ear. At the time of examination hearing in R. E. = o; in the left ear, the voice close to the ear was heard. On December 13th the patient was etherized and excision of the upper posterior quadrant of the left membrana was performed. The membrane, being exceedingly thick and integumentary, bled profusely, and the operation was, in consequence, greatly delayed. The incus was seen with difficulty, but finally dislodged. The stapes was not seen at the time of the operation. The incus was accidentally dropped from the forceps into the tympanic cavity, but was finally hooked into view and removed. I now endeavored to convert the upper posterior quadrant of the membrana into a flap, and push it inward against the promontory to act as a preventive against a detached ossicle from falling into the tympanic cavity.

On December 17th the patient heard the voice several inches away from ear. She had some fugitive pains in the ear, but no discharge of any kind. On December 19th there was some pain reported in the ear on the night of the 17th, and some bloody mucopurulent matter ran from it, probably due to the grappling for the incus when it fell to the bottom of tympanic cavity. However, at this date, there was no pain and the improved hearing was maintained.

Case IV.—This was the right ear of the same patient as reported in Case III. It had been my intention to operate on both ears in this case at the same etherization, but the delay caused by the hemorrhage, dropping the incus, and finally the breaking of a "lug" in my storage battery, forced me to postpone the operation on the right ear until December 19, when the patient being again under ether, I excised the upper posterior quadrant of the membrana tympani and exposed the incus and the stapes. The chorda tympani prolapsed into the auditory canal after the removal of the incus, which was easily accomplished. I made traction with the blunt hook on the stapes and brought away the head and crura. On December 20th the patient could hear at a distance of several inches in this ear, in which she had not heard for years. There was no reaction. On December 23d she heard better in the right than in the left ear. On December 24th the patient went home pleased with the result of the operations.

Case V.—Mr. J. H. P., twenty-three years old, has had chronic hypertrophic aural catarrh—ambilateral—for several years. The left ear was formerly better than the right ear. The latter has improved under treatment of the naso-pharynx, but the left ear has not improved. The hearing-distance in the left ear for the voice was one foot, and there was annoying tinnitus. The membrana tympani was opaque. The incus-stapes articulation was not visible through the membrana. On December 15th the patient was etherized and the posterior superior quadrant of the membrana was excised. The incus, stapes, stapedius pyramid, and the tendon inserted into the stapes were plainly visible. The tendon of the stapedius was first severed; then the incus was separated from the stapes and removed from the tympanic cavity. The blunt stapes-hook was passed beneath the head of the stapes and traction was made. The bonelet was found to be most firmly imbedded in the oval window. Traction upon the bonelet by the stapes-hook brought away the head and crura. The operation was bloodless.

On December 16th no reaction had taken place and there was much less tinnitus. The hearing-distance was not noted, as I failed to see the patient. On December 17th no reaction had occurred and there was marked diminution of the tinnitus; the hearing-distance for voice, low tones, was from four to six feet. On March 28, 1893, the perforation in the membrana had been maintained. A little tinnitus is perceived in this ear, if the patient takes cold in his head; otherwise he does not observe it. He volunteers the statement that *the operation was worth the relief from the tinnitus, regardless of the improved hearing.* The hearing-distance at the present time is from eight to ten feet for isolated words.

Case VI.—B. B., a girl, twelve years old, had been known to have dulness of hearing in the left ear for two years. The right ear is entirely normal. Hearing in the left ear, o; tinnitus, and vertigo at times, are annoying; the tuning-fork is heard *per ossa*.

On December 16, 1892, the patient was etherized and excision of the upper posterior quadrant of the left membrana was performed; no bleeding followed. The incus, stapes, and stapedius pyramid, with tendon, were distinctly seen. The stapedius-tendon was severed first; then the incus was detached from the stapes; the stapes was then removed entire, with the greatest ease, from the oval window. There was no escape of labyrinth-fluid. Finally the incus, which seemed unusually adherent in the attic, was removed.

The operation was bloodless. On the next day there was no reaction, no vertigo, and the patient felt well and lively; she heard isolated words in the left ear at a distance of from eight to ten inches; there was no tinnitus. On December 22d there was no reaction and no regeneration of the membrana; voice was heard in whisper at a distance of from six to eight inches; louder tones from two to three feet. There was no regeneration a month later. On April 1, 1893, regeneration of the membrana was found. The hearing was not improved, but there has been *entire relief from tinnitus and vertigo*, which symptoms had been ascribed to other causes before the ear was examined by me and finally operated upon.

CASE VII.—H. W., a cook, twenty-six years old, of English parentage, had been deaf for many years. In the right ear she hears the tuning-fork *per aēr* at a distance of one inch; in the left ear at two inches. She has marked symptoms of sclerotic otitis media. On January 13, 1893, the patient was etherized and the posterior superior quadrant of the right membrana was excised. The incus, stapes, and stapedius-tendon were exposed, the last cut, and the incus detached from the stapes and *pushed aside to be left in the tympanic cavity in this instance.* The stapes head and crura were then removed without the foot-plate, the latter being firmly fixed in the oval window; no bleeding ensued.

On January 14th, there had been no reaction, but considerable bloody serum had run from the ear, and the patient now left the hospital, in very cold weather. She heard isolated words at several inches' distance in the right ear. On January 16th, the patient reported that she had had a little pain in this ear; the bleeding from it still continued. This patient has very bad teeth, and at times, toothache. The atmospheric temperature was at 0° at this time. On January 17th, pain still continued in this ear and there was a discharge of bloody serum. The mucous membrane of the tympanum was congested and secretory; there was marked tinnitus. From January 18th to 25th, there was more or less constant and severe pain in this ear, with swelling of the meatus, tenderness, and a discharge of considerable pus. Loss of sleep from ear-pain was complained of. On January 31st, the ear was entirely well; the perforation in the membrana had healed and the patient heard no better than before the operation.

The incus should not have been left in the tympanum after its detachment, and the patient should not have left the hospital the day after the operation, in such very cold weather as was then prevailing.

CASE VIII.—H. S., a girl, twelve years old, said that about two or three years ago hardness of hearing was noticed in the right ear. No cause was assigned for such a failure in function. Hearing was perfect in the other ear. Voice, close and loud, could be heard in the right ear. The patient had some sclerotic catarrh of the nares and naso-pharynx. The latter was treated for some weeks, with benefit, but without improving the hearing. On March 3, 1893, myringotomy was performed in the posterior superior quadrant, and the incus and stapes exposed. The incus was detached from the stapes and removed. The stapes was pulled upon by the blunt hook and the head and crura detached from the foot-plate, but they were drawn off the hook by the tendon of the stapedius and dropped out of sight behind the membrana. On March 4th, no reaction had ensued and no improvement in hearing. On March 28th, there had been no reaction and no irritation in the ear at any time. The membrana is entirely healed and rises and falls normally under Siegle's speculum. There has been no improvement in hearing.

CASE IX.—Mrs. W. G. P., forty-one years old, of New York, came under observation December 7, 1892. The patient stated that she began to grow deaf at the age of sixteen years; tinnitus existed in both ears of equal intensity and of a pulsating variety. Hearing in each ear, for the voice, was at about six inches, perhaps less acute in the left ear. The tuning-fork was not perceived *per aēr*. Bone-conduction was normal. A nasal polypus was removed from the right naris; otherwise there was no disease of nose or naso-pharynx. The membranæ tympanorum were slightly opaque.

On March 16, 1893, the patient was etherized and myringectomy at the posterior superior quadrant of the left membrana revealed simply the extreme lower curved end of the incus. The incus was detached by the blunt hook and removed from the drum-cavity. The stapes was not seen, and hence was left undisturbed. The round window was placed very high and its plane turned farther forward and outward than any I have ever observed. The operation was nearly a bloodless one. On March 17th, no reaction had followed and no improvement in any of the symptoms. On March 18th, there had been no reaction, and the hearing was a little better, the tinnitus being less than in the other ear. In fact, the patient felt so much relief in the left ear as to express a desire to have the operation performed on the other ear. On March 19th, there was still no reaction, and the patient went to church. On March 20th, it was decided to operate on the right ear, as the left ear felt so much better than the right ear, which had been considered the better ear.

CASE X.—On March 20, 1893, operation was performed on the right ear of the patient in the preceding case. Excision of the upper posterior quadrant was effected. The membrana was found thicker and more retracted than that of the left, and there was a little more bleeding than from the left. No cocaine was used, as I am convinced that it is an irritant to the mucous membrane of the drum. The incus was detached in the same manner

as was the left incus, and was removed from the tympanum.

On March 21st no reaction had followed. The patient felt very well, and could hear isolated words spoken eight feet off, and she also heard her companion singing some distance from her, which she had never heard before. The tinnitus, however, was not materially relieved. The patient also heard sounds in the house and street she had never heard before from her room. On March 23d the patient returned to her home, and on March 28th I heard from her that the improvement had continued.

CONCLUSIONS.—1. The operation of partial excision of the membrana tympani (myringectomy of the posterior superior quadrant) is practically unattended by reaction.

2. Reaction not attending this modification of excision of the membrana, regeneration of the membrane is less likely to occur than when total excision of the membrana is performed.

3. Removal of the malleus is not necessary for relief in cases of simple chronic catarrhal otitis media.

4. The removal of the incus alone, or of the incus and the head and crura of the stapes, is followed by results as good as when the incus and the entire stapes are removed.

5. Displacement of the incus and leaving it in the drum-cavity, where the stapes is removed in part or in whole, is likely to be followed by inflammation of the middle ear, as shown in Case VII.

6. Removal of the incus alone, the membrana, malleus, and stapes being left *in situ*, gives *more space in the drum-cavity, increases its resonance, and permits freer access of sound waves to the stapes, thereby improving the hearing.*

7. The relief of tinnitus and aural vertigo is very probably due to the liberation of the stapes from the impacting weight of the incus, forced inward and held so by the retractive power of the indrawn membrana tympani and malleus, as I suggested over four years ago.[1]

NEURALGIA OF THE BASE OF THE FOURTH TOE, AND ITS TREATMENT.

BY N. F. GRAHAM, M.D.,
PROFESSOR OF SURGERY IN THE MEDICAL DEPARTMENT OF HOWARD UNIVERSITY, WASHINGTON, D. C.

THIS painful affection has been long known to the observing in the profession, but no systematic observations as to its nature or causes were made until about the year 1870, when Dr. Thomas G. Morton, of Philadelphia, began to examine into the subject. In 1876 he embodied such facts as he had gathered in a clinical lecture which was published in the *American Journal of the Medical Sciences*. Since then the malady has been known as "Morton's painful affection of the foot."

It is a neuralgic affection at the base of the fourth metatarsal bone.

Dr. Morton gives the history of fifteen cases that came under his professional care between the years 1870 and 1876. In all of these, the pain was localized to the fourth metatarso-phalangeal articulation. In some of the cases the pain followed at once upon an injury, such as stepping on a rolling stone, and others were gradually developed from long continued pressure by the shoe.

When caused by an injury, the pain is quite suddenly developed, and is severe. When due to pressure the pain is but slight at first, increasing in severity until at times it becomes excruciating, and is only relieved by removing the shoe and manipulating the foot—spreading the toes and stretching them. Sometimes temporary relief is obtained by lateral pressure, and again, by pressure on the top and bottom of the toe.

Five of Dr. Morton's published cases were operated upon by the removal of the metatarso-phalangeal joint of the fourth toe, resulting in a cure so far as the pain was concerned. It is not stated, however, what the condition of the foot was as to deformity, or whether bony union took place between the resected ends.

It is believed by those who have given the subject attention that the anatomy of the metatarso-phalangeal joints may and probably does account, at least to some extent, for the trouble. The proximal joints of the great, the second, and the third toes are usually in a line; the fourth toe falls backward, often as much as one-fourth of an inch, whilst the fifth is shortened from three-eighths to one-half of an inch. This natural conformation of the foot brings the first half of the proximal phalanx of the small (fifth) toe against the proximal joint of the fourth toe, and in this way I believe the digital nerve of the fourth toe is compressed and injured by the base of the phalanx of the fifth toe.

The greater mobility of the fourth and fifth toes renders them more liable to the effects of injuries, whether from blows, sprains, or compression by a tight or ill-fitting shoe. The external plantar nerve gives off superficial and deep muscular branches. The superficial branch separates into two digital nerves that supply the outer and inner sides of the small toe and the outer side of the fourth toe. The peculiar relation of the proximal joints of the fourth and fifth toes, together with the greater freedom of motion in this part of the foot, renders this locality more liable to suffer from injuries. So, when the foot is compressed by a tight shoe, the digital nerve supplying the outer side of the fourth toe is subjected to pressure from the hard, unyielding

[1] The Polyclinic, Philadelphia, August, 1888.

phalanx of the fifth toe, setting up an irritation in the nerve that gives rise to the pain. This may be moderate or intense, according to the degree of injury done to the nerve.

Females are more prone to suffer from this affection than are males, owing to the tendency of the former to wear tighter, narrower, and shorter shoes, thus compressing the foot and toes in every direction. As a result, the proximal phalanx of the fifth toe is kept constantly in contact with the digital nerve on the inner aspect of the fourth toe. The fact that the female foot is more pliable and delicate cannot be regarded as a factor in causation. The malady would just as often be met with in men did they wear as tight, high-heeled, and unsuitable foot-gear as women. Neuralgia of the fourth toe should not be confounded with metatarsalgia, which is a very different affection, and one that is always due to compression of the whole foot from side-to-side lateral pressure.

In the ordinary style of boots the arch of the foot is not properly supported, and as a result an undue strain is placed upon the metatarsal bones and the metatarso-phalangeal joints of the great, second, and third toes. Usually, in measuring for a shoe the shoemaker measures whilst the foot is in an elevated position and the arch of the foot drawn up. No allowance is made for the change that takes place when the individual is erect and the foot is spread and lengthened by the weight of the body on it. So, when the shoe is made it is constructed to fit the foot in the shape and position in which it was held during the measurement, and not for the position it assumes when the full weight of the body is brought to bear upon it.

At first the pain in metatarsalgia is not great, but as the day advances the cramping pain in all of the tarso-metatarsal joints becomes aggravated and very soon becomes unbearable. It can only be relieved by the removal of the boot, followed by manipulation of the toes and foot. The reason why the pain is greatest in these joints, is because of their greater width and the greater degree of spreading which takes place in this locality when the foot is made to support the weight of the body. Metatarsalgia is not strictly a localized affection of the nerves, but is due rather to general pressure. It is the experience that comes to every person who attempts to "break in" a very tight shoe. If the wearing of tight shoes be persisted in, this condition may become chronic and may assume many of the characteristics of rheumatism, and be, like rheumatism, aggravated by cold and dampness.

The treatment of acute metatarsalgia is the removal of the offending shoe and the wearing an old or loose one. If the affection become chronic, the wearing of wide-soled shoes of a sufficient and comfortable length, together with a pad to support the arch, is all that is necessary. Frequent bathing with hot water or the application of soothing liniments may be necessary, in addition to the properly constructed shoe, providing the pain persists.

Pododynia or podalgia are names applied to certain painful affections of the foot that have no fixed location, although the pain is commonly situated in the heel or sole of the foot, and may be purely reflex from diseased conditions situated at parts remote from the foot. For example, a stricture of the urethra, cystitis, or disease of the prostate may give rise to a pain in the heel. Neuralgia located at the neck of the bladder may cause podalgia, and gout and rheumatism are fruitful causes of the affection. Renal calculus, gonorrhea, and syphilis are accompanied by diseases of the foot, such as gonorrheal rheumatism and syphilitic bursitis.

In the early stages of posterior-spinal sclerosis the heel is quite often the seat of persistent pain, which may continue indefinitely throughout the progress of the disease. For the relief of pododynia the treatment should be directed to the remote affection on which the pain may be found to depend.

Various measures, remedial and mechanical, have been resorted to for the relief and cure of Morton's disease. Among the most important of these is the discarding of short and tight shoes, and the wearing of broad-soled and loose ones, a soft pad being placed between the fourth and fifth toes, and the toes being fixed together at their free ends in order to separate the metatarsal ends. Many secure relief by wearing an elastic band around the foot over the metatarsal bones. Frequent bathing in warm water and the use of liniments are sometimes helpful, but the most successful plan in the majority of cases is the wearing of suitably constructed shoes.

Beyond any cavil the shoe is, in the very large majority of cases, the exciting cause of the affection, and but a very small percentage can be regarded as attributable to an injury. I am the more strongly convinced of this fact from inquiries among shoe-dealers. Those whose patrons come from the richer class of society are quite familiar with an affection of the foot, which, from their description, is no doubt a neuralgia of the fourth toe, and with which those who deal largely or altogether in the coarser and roomier kinds of foot-gear are not at all familiar.

Dr. Morton's operation for the radical cure of this affection consists in making an incision two inches in length along the outer edge of the affected toe, opening up the articulation, and resecting the ends of the metatarsal bone and phalanx.

In my own personal experience, covering a period of about eight years, I have met with and have notes of fourteen cases, nine of which were cured or

materially relieved by properly constructed shoes, *i. e.*, shoes with broad soles and of length sufficient not to cramp the toes. I have also given relief by separating the toes by pledgets of cotton and by the use of liniments, particularly the one composed of chloral-camphor and chloroform.

In one very aggravated case I amputated the toe, removing also a portion of the metatarsal bone. The result was a perfect cure so far as the pain was concerned, and the patient being a man, the deformity resulting from the loss was not regarded by him as material. The foot remains strong and well after a period of seven years, with no return of the pain.

The four remaining cases I will give in detail:

CASE I.—J. S., female, thirty-six years of age, had been in the habit for many years of wearing narrow and short shoes. She came under my observation early in 1885, suffering from constant pain at the base of the fourth toe that began about two years before. The base of the toe was somewhat swollen, and examination revealed a slight cord-like prominence along the course of the digital nerve of the fourth toe, and a similar enlargement of the nerve on the inner aspect of the fifth toe, which I thought to be inflammatory swellings in the nerve-sheaths. I made an incision, dividing integument and fascia over both the elongated prominences, a little above the middle line, between the top and bottom of each toe; I divided the web above this first incision, continued it upward about an inch, and resected the extremities of both nerves from near the points of the toes to somewhat over half an inch above the metatarso-phalangeal joints. The process of repair was complete in a week, with perfect relief from the pain, which had for months been very severe.

In this case the pain was not confined to the diseased nerves, but extended upward as high as the ankle. There has been no return of the pain, and the woman can now wear ordinary shoes with comfort.

CASE II.—Mrs. J. R., thirty-eight years of age, was a strong, healthy woman, of excellent habits and having no constitutional defect of any kind. For many years her occupation required constant standing and moving about. Being somewhat stout, the constant pressure on the feet was increased by her weight. She came under my care in June, 1885. She gave a history of pain at the base of the fourth toe, which was at first slight and temporarily relieved by moving the toes about in the shoe. In the course of a few months the pain came on in severe paroxysms that continued until she was compelled to remove the shoe and manipulate the foot in order to secure relief. She had used hot and cold water and liniments, and had also increased the size, length, and breadth of her shoes, all without avail, until finally she had concluded to consult me with a view of having the toe removed. Examination revealed a tender line along the course of the digital nerve on the outer aspect of the fourth toe

Bringing to mind the success attending the removal of the digital nerves in the previous case, I suggested the same operation to her, to which she readily consented. I operated by making an incision on the outer side of the toe, along the tender line, extending from the point of the toe to the web, continuing it backward between the metatarsal bones about an inch. The nerve was easily found, as it was enlarged, and I removed it from near its extremity to a distance of five-eighths of an inch above the head of the metatarsal bone. Union took place by first intention and the patient has since been wholly free from pain, the foot being as useful as it ever was.

CASE III.—Mrs. L. J., forty years of age, came under my care in the autumn of 1891, suffering from constant pain which had its origin at the base of the fourth toe. During the severe paroxysms to which she had recently become subject, the pain extended as high as the trochanters, simulating, at times, sciatica, except that the pain always began in the foot and extended upward. There were times when she was unable to work or move about. Before coming under my care she had been advised to wear broad and roomy shoes, to bathe the foot in hot water, and had used, as she expressed it, "all sorts of liniments," and all without relief.

Examination revealed a distinct cord-like prominence along the course of the digital nerve of the fourth toe, which I removed in the manner described in the case immediately preceding. The operation was followed by complete relief, and with the pain in the foot the pain in the leg and thigh also disappeared.

CASE IV.—Mrs. L. M., thirty-two years of age, came under my observation in April, 1892, suffering with intense pain at the base of the fourth toe. The toe was swollen and red, as was also the fifth toe. She could not endure the slightest pressure of a shoe, and was wearing large, broad-soled slippers. Any attempt at wearing a tight-fitting shoe caused so much pain that she could neither walk nor stand after a very short period. I applied a lead-and-opium wash with a view to controlling the inflammation and relieving the pain. After a few days of this treatment, with complete rest, the inflammation subsided, but an effort at wearing a shoe resulted in a recurrence of the pain, which extended along the foot and leg, terminating at the knee. An examination at this time revealed the presence of a painful line extending along the outer aspect of the head of the metatarsal bone and the proximal end of the first phalanx. The nerve was removed by an operation similar to that practised in the previous cases, resulting in decided relief at once. The results, however, were not so perfect as in my other cases, as when I last saw the woman, some four months since, she complained of a recurrence of the pain in a modified degree whenever she wore a tight shoe or walked for any length of time. She is not a prudent woman and did not take as good care of the foot, after the operation, as I wished, in addition to

which it may be said that she is a peevish and complaining woman and one whose habits are not particularly good, which may account for the occasional paroxysms of pain of which she complains. I think, too, it would have been better had I resected the nerve on the inner aspect of the small toe at the same time that I removed that of the fourth toe.

In all of these cases the resection of the nerve has proved so satisfactory that I shall continue to practise this mode of treatment in preference to any other. It has the advantages of being simple and easily performed. It leaves no deformity and seems to me to be a rational mode of procedure.

If, as seems to be established from the cases cited, the pain is due to the nerve, then I think this plan for its cure is reasonable and worthy of trial in this class of cases, which are by no means rare.

The removal of the toe and part of its metatarsal bone, or a resection by Morton's method, leaves some degree of deformity, which is an objection. The resection of large tracts of nerves at points remote from the seat of pain is not at all necessary, and, so far as tried, is not satisfactory. None of these objections can be urged against the removal of the diseased or painful portion of the nerve.

CLINICAL MEMORANDA.

A CASE OF APPENDICITIS OCCURRING ON THE SEVENTH DAY FOLLOWING LABOR; RUPTURE INTO THE BOWEL; RECOVERY.

By REUBEN PETERSON, M.D.,
GYNECOLOGIST TO ST. MARK'S HOSPITAL, GRAND RAPIDS, MICH.

On November 29, 1892, I attended Mrs. S. in her fourth confinement. The labor was short and perfectly normal, and at 9 P.M. she was safely delivered of a nine-pound infant. The strictest antiseptic precautions were employed during and after the labor. The bowels were moved by an enema on the third day, and on the evening of the fifth day a mild laxative was administered, which was followed by a free evacuation the next morning. The temperature for the first week after the confinement never rose above 100°, and the patient even remarked that she had never done as well in her previous confinements.

On Tuesday, December 6th, I visited the patient at 7 P.M. for the purpose of giving directions about placing the infant upon an artificial food, the maternal milk-supply having proved inadequate. The mother at this time was feeling perfectly well, and was told that she might sit up in two or three days. My surprise, and, I may say, my chagrin, was great when I was hastily summoned two hours later to find the patient just recovering from a severe chill, with a temperature of 103° and a pulse of 120. Naturally my first thought was of sepsis in some form, but a most careful examination failed to reveal anything of this nature. The abdomen was perfectly flaccid, and thorough palpation showed no tenderness, either in the region of the uterus or elsewhere. The lochia were perfectly sweet and normal in every particular. Vaginal examination was also negative, and failed to show evidence of any pus-tube or parametric inflammation. So sure was I that some other than a septic trouble was the cause of the chill, that I questioned the patient closely in regard to her previous history, and felt relieved when told that she had had "malaria" some years before, although she had never had any chills accompanying it.

As she had formerly resided in a malarial district, and as the temperature the next morning was normal, although the pulse was 90, I judged that it might be a case of malaria, and, as not infrequently occurs in women who have been subject to this disease, that it had manifested itself during the puerperium as a chill. This diagnosis I was forced to make from an absence of physical signs indicative of anything else, but I watched closely for any symptoms that would warrant a change of mind as to the cause of the chill. While I was waiting I gave quinine until its physiologic effects were manifest.

On Thursday, December 8th, two days after the chill, the temperature, which had been normal during the day following the seizure, rose to 101°, although there were no chilly sensations. There was no abdominal tenderness, and the lochia remained normal. I ordered two tablespoonfuls of Epsom salts, with the idea that if a septic trouble existed it might be aborted by a thorough depletion of the peritoneum by means of copious watery dejections. During the afternoon and evening of December 8th the bowels moved frequently, in all as many as ten times. The next morning the patient began to be troubled with flatus, and at noon I found the abdomen moderately distended, and for the first time was enabled to locate some tenderness over the right side. The abdomen was not so distended as to prevent me from readily mapping out the uterus. The gas seemed to be collected principally in the ascending colon, which could be plainly outlined beneath the abdominal walls. The tenderness was not especially marked in the region of the appendix, and was at no time severe, but simply sufficient to enable one to detect it upon deep pressure. A moderate degree of dulness could be obtained over the whole right side of the abdomen by making use of light percussion and disregarding the tympanitic note. The patient complained of a dull pain in the right hypochondriac region, and noticed that she could not turn from one side to the other with as much freedom as formerly, and that when she lay upon the left side there was a sense of dragging in the opposite side.

On Saturday, December 10th, there was more pain on the right side, but it was still located high up in the region of the liver. It was not the acute, sharp pain indicative of peritoneal inflammation, but more of a dull ache or uncomfortable feeling, and was increased by movement. Although it seemed impossible that the trouble was in any way connected with the uterus, I again examined the pelvic organs thoroughly and found them perfectly normal. On Saturday evening, December 10th, the diagnosis was quite clear, for the tenderness began to be localized in the right iliac fossa, and a sense of resistance, but no distinct tumor, could be made out. Up to this time there had been no tenderness over McBurney's point, but now this sign began to show itself, though the tenderness was not marked.

During the next three days the symptoms became more severe. The temperature ranged from 100° in the morning to 102.5° at night, the pulse remaining at about 100 most of the time. The tongue became coated, the appetite poor, but the patient's condition was at no time alarming. The tenderness in the right iliac fossa was most pronounced about one week after the initial chill, when it and the sense of weight in the right side became less pronounced after a free evacuation of the bowels following a dose of castor oil. A well-defined, deep-seated tumor could be made out at this time in the region of the appendix, sausage-shaped, and extending down to the brim of the pelvis. It was non-adherent to the abdominal walls, and no fluctuation could be detected. The point of maximium tenderness was at the extreme end of the mass, but the sensitiveness was never very great, and deep pressure was necessary in order to make the patient complain of pain. There was but little abdominal distention, and what existed disappeared after each evacuation.

The treatment consisted in the administration of ounce-doses of castor oil once or twice a day, and the frequent employment of turpentine enemas, so that from two to four free daily evacuations were secured. The diet was restricted to peptonized milk and broths. Turpentine stupes were applied to the abdomen at the time when the pain was located over the liver, but these were discontinued upon the cessation of the pain, and local treatment was limited to daily applications of tincture of iodine over the right iliac region. On December 14th, eight days after the initial chill, the tenderness began to subside, and the patient could move from side to side with much more ease. The tumor, however, could still be plainly outlined, but showed no signs of fluctuation. In spite of these encouraging symptoms, the temperature and pulse remained high, and the patient felt most of the time as if bordering upon a chill.

On December 16th the conditions remained practically unchanged, and Dr. Eugene Boise was called in consultation, who, after a thorough examination of the patient, confirmed my diagnosis and coincided with me in the opinion that it would be better to await developments than to run the risks attendant upon an endeavor to drain an abscess-cavity in the region of the appendix, when no adhesions to the abdominal wall existed. The dangers and possibilities of a fatal outcome on the expectant plan of treatment were fully considered, but we decided, in view of the absence of alarming symptoms, to wait at least twenty-four hours, and in the meantime to make preparations to operate at any moment in case the necessity arose.

The following morning the patient's temperature was normal and her pulse 76, and she passed quite a quantity of pus from the bowels. From this time on she made a rapid recovery. The temperature remained normal, the tongue became clear, the tumor gradually disappeared, and an examination made December 27th showed only a slight thickening.

I have reported the foregoing case in detail for two reasons: First, because it is uncommon for the puerperal state to be complicated by an attack of appendicitis; and second, because it will place upon record a case of appendicitis with abscess, in which recovery took place without operation.

While the diagnosis of appendicitis can usually be quite readily made, it was in this case by no means easy, from the fact of the absence of local signs and of the initial chill occurring seven days after labor. While the rigid requirements of modern antiseptic midwifery are fast reducing the mortality among puerperal women to a minimum, and while the accoucheur can, by a strict observance of these rules, feel almost certain that no germs have been carried from without into the parturient tract during or subsequently to labor, he is by no means as certain that sepsis may not originate from the absorption of the germs lodged in a pus tube which has long existed, but which has not been diagnosticated.

That this is not a fanciful cause of puerperal fever is attested by the ever-accumulating list of reported cases. Tait[1] thinks it of enough importance to give in detail six cases reported by Dr. McDonald, in which puerperal fever originated from diseased appendages. Smith[2] calls attention to pyosalpinx as a not infrequent cause of puerperal fever. And the number of single cases reported in the journals is considerable.

Thus, while the attendant may be perfectly sure of his antisepsis, he is still unable, in the event of fever during the puerperium, to exclude sepsis arising from internal causes. And it was this uncertainty that gave rise to so much anxiety upon the occurrence of the chill in the case just reported, and which led to repeated examinations of the appendages before the localization of the tenderness and the appearance of the tumor in the right iliac fossa made the diagnosis of appendicitis clear. The different factors considered at the time were:

1. Septic infection, originating in the vagina or endometrium. This was excluded by absence of foul lochia and of pathologic conditions, as revealed by careful digital and ocular examinations.

2. Sepsis, arising from some preëxisting affection of the appendages. This was excluded by the absence of all signs of such an origin, as revealed by bimanual examination.

3. Latent malaria, manifesting itself during the puerperium in the form of a chill. This was excluded only after the localization of the symptoms in the right iliac fossa.

4. Some obscure renal trouble of the right side. This was excluded by careful palpation of the kidney and examination of the urine.

5. Appendicitis—easily diagnosticated upon the appearance of the local signs.

It may be claimed that recovery from an attack of appendicitis by the rupture of the abscess into the bowel is of too common occurrence to merit a detailed description; but for a number of reasons it would seem as if these cases should be recorded. The accumulation of such cases and a careful consideration of the existing conditions may lead to a more conservative treatment of the disease than is prevalent in some quarters. In demonstrating the fact that for the lack of surgical interference in cases of appendicitis many valuable lives have been sacrificed, the surgical world may possibly be going to the other extreme, and by a too hasty resort to the knife may be running the risk of not

[1] Abdominal Surgery, vol. i, p. 402.

[2] N. Y. Journ. Gyn. and Obst., Nov., 1892, vol. ii.

decreasing the mortality from this disease as much as would be possible under a more conservative course.

The reasons against an operation and favorable to the expectant plan of treatment were:

1. The physical signs indicated but little involvement of the peritoneum by the inflammatory process, and led us to suppose that pus, if present, was extra-peritoneal, and hence that less danger of intra-peritoneal rupture existed.

2. For three days previously to the rupture into the bowel the local signs were decreasing and not increasing.

3. The tumor was unattached to the abdominal wall, and the dangers were considerable of opening the general peritoneal cavity in an attempt to get at the pus, and thus starting up a general peritonitis.

4. While the general condition of the patient was not improving, it was growing no worse, and as the local tenderness was diminishing, it seemed highly probable that either the abscess would become attached to the abdominal wall, where it could be readily opened, or else be discharged through the bowel.

On the other hand the indications calling for an operation were:

1. The probability of the existence of pus, as indicated by rise of the temperature, the frequency of the pulse, and the presence of chilly sensations.

2. The advisability of giving exit to the pus through an abdominal incision, for fear the abscess otherwise might rupture into the peritoneal cavity and set up a general peritonitis.

The cases one sees most commonly reported are those in which the cure has resulted from surgical interference, and the scores of cases recovering without resort to the knife are likely to be lost sight of because they are not considered worth recording.

Fitz, to whom so much credit is due for his researches upon appendicitis, has recently again called attention to the fact "that nearly one-half of the cases of appendicitis get well without surgical treatment."[1] And this statement was called forth by a paper in which the author claimed that *every* case of appendicitis should be operated upon as soon as the diagnosis was clear. It is against this attempt to establish a universal rule of procedure that we must guard. Every case must be considered separately, and, while fully alive to the dangers of temporizing when the symptoms indicate that the disease is progressing rapidly, we should ever be on the watch for symptoms that will allow us to dispense with the knife. "The tendency of the best surgical thought in regard to appendicitis is toward an enlightened radicalism."[2]

A CASE OF NORWAY ITCH.

BY ROBERT HESSLER, A.B., M.D.,
PATHOLOGIST TO THE INDIANAPOLIS CITY HOSPITAL.

ABOUT the middle of last October the superintendent of the City Hospital brought me a small handful of "scales" from a patient admitted on that day and afflicted with some obscure skin-disease. I was requested to examine these scales microscopically and, if possible, determine the nature of the disease.

A brief history of the case obtained at that time was about as follows: The patient, a middle-aged man, a former base-ball player, had been a paralytic for several years; the right side of his body was not under control. A skin-eruption appeared three or four years ago, and in spite of medical treatment by various physicians steadily grew worse. Various diagnoses had been made. Syphilis was the most common diagnosis, although the history and family history were strongly against this. The provisional diagnosis now was universal squamous eczema.

In the light of such a history I thought it very unlikely to find anything in the scales, and, furthermore, I knew from experience that in sectioning epithelial scales the microtome knife usually loses its keen edge. I therefore simply placed the largest of the scales in a bottle of alcohol and threw the smaller ones into the fire, and gave no further thought to them.

A few days later I saw the patient. The naked body presented a horrid appearance. The man was thickly covered with scales of variable size and of a creamy-white color. The larger scales measured over one inch in diameter and one-tenth of an inch in thickness; the small ones were thin and bran-like. Where the skin bent, as at the joints, a few scabs or crusts of a dirty color occurred. The man was covered with scales like a fish; even the palms, fingers, and toes were affected. A constant shedding of these scales was going on; a handful could be gathered daily.

Skin-diseases not being *mein Fach*, I took it for granted that the case was an extreme form of eczema, and made no further study at that time.

Four weeks later I learned that several of the patients in the ward with the case reported were afflicted with a cutaneous eruption, the source of which was ascribed to the "fish-scale-man." The physician in charge of the ward diagnosticated the cases as scabies or common itch, but was not thoroughly satisfied with the diagnosis. I now determined to thoroughly examine these patients. A close search for mites was made, by myself and by several other physicians, but none were found. I may here add that, with the experience I have had since then, I can say it is no easy task to find itch-mites in an ordinary case of itch. I now determined, as a last resort in finding a cause, to examine the scales received four weeks previously.

The very first section I made revealed several mites and eggs, and the diagnosis of scabies was at once established. It is perhaps unnecessary to say that all the patients were at once vigorously treated for itch. The fish-scale-man was discharged, cured of his skin eruption, three weeks later, after having suffered for several years.

I now began to read up on scabies. I was surprised to find that it was not until about the year 1835 that the itch-mite was universally recognized as the cause of the itch. There is no uniformity in the scientific names of the itch-mite. Among entomologists the itch-mite is universally known as *sarcoptes scabiei* (De G.). The size of the mite is variously given as from "very minute, almost microscopic," up to "the size of a pin-head." Itch due to other kinds of mites, as from the domestic animals, is rarely met with. The number of mites in an ordinary acute or epidemic case of itch is quite small, perhaps rarely exceeding one hundred adult animals.

[1] Boston Medical and Surgical Journal, August 4, 1892.
[2] Editorial, MEDICAL NEWS, December 10, 1892.

In the numerous works on skin-diseases which I consulted I found no description of such an extreme form of the itch as presented in this case. Dr. Taylor's *Atlas of Skin Diseases* gave me a clew that soon put me on the right track. He says (p. 327): "European writers, particularly of previous decades, have described a severe form of incrusted eczematous scabies which they call scabies Norvegica or Norway itch. It is not seen in this country."

In Hebra's classical work on *Diseases of the Skin* (1868), a description was finally found. Hebra's first case was from Norway, and he therefore called it the Norway itch; he makes mention of several cases that have been observed in different parts of the world.

Sections from the shed epithelial scales are unique. The scales are riddled with burrows or passages of the mites, and are full of mites and eggs in all stages of development. Staining with picrocarmin gave distinct colorations; the tissue appeared red, the mites yellow; the eggs remained unstained, that is, white; the feces appeared dark-brown or black. In normal skin the outer layer stains a bright yellow. In the present case very little yellow appears in well-stained sections. This shows that the cells have not cornified. The epithelium, on account of the extreme irritation, grew and shed so rapidly that it had no time to harden.

In the literature within my reach I found no mention of any estimate of the number of mites present in a case of scabies Norvegica. I therefore determined to make a count and a calculation. The methods and details of the work were given in a paper read before the Indiana Academy of Science at the December meeting. The method pursued was, briefly, as follows: Pieces of scale of a definite size were stained in picrocarmin, imbedded in paraffin, sectioned and mounted in serials. Each section was diagrammed by means of an Abbe camera, the position or location of the mites and eggs being given. The count was made from the diagrams. Several counts were made in each case, and the mean of all counts was taken as an approximately correct number. A simple calculation gave the number for the whole body.

I was astonished when I reached the final figures, and hurriedly went over my calculation to see if I had not made an error. The number of mites and eggs is almost beyond belief. There were at least 2,000,000 mites and over 7,000,000 eggs (including empty shells) on the patient when he was admitted to the hospital.

THE TREATMENT OF PUERPERAL ECLAMPSIA.

BY THEO. G. DAVIS, M.D.,
OF BRIDGETON, N. J.

MY first case of eclampsia was treated by chloroform-inhalations; pilocarpine hypodermatically; chloral and potassium bromid by rectal injection; and finally, morphine hypodermatically, forcible dilatation of the os, and forceps-delivery of twins after thirty-two hours. A good recovery followed, but the length of time required to control the convulsions led me to seek a better and more rapid way of controlling them.

I have since had six cases, all but one being in primiparæ. Five were treated by the conjoint hypodermatic injection of morphine, gr. $\frac{1}{3}$, and tincture of veratrum viride, gtt. 6, in 30 minims of water to which 6 drops of alcohol had been added. In less than one hour the pulse was reduced from 140 to 70, and even, in some cases, to 60 per minute; the rigidity relaxed; the skin became moist; the convulsions ceased. In only one case was it necessary to repeat the injection. Heat was applied to feet and limbs, and labor was allowed to take its course.

In one case the convulsions began three hours after delivery; in one they occurred during labor, with the head upon the perineum; in one they occurred one day before labor; and in one case two weeks before delivery. In one case the child was still; in all, the mothers recovered.

None of these cases had had previous attendance. The urine was scanty and laden with albumin. The pulse was strong, full, and rapid; in this class of cases I believe morphine to be the best remedy, combined with tincture of veratrum viride, instead of venesection. I would not neglect hot baths and evacuants, when needed.

To emphasize the fact that all cases cannot be treated alike, I will report a seventh case, in which the symptoms and conditions were very different. Mrs. A., a primipara, was left in bed by her husband at 6 A.M., complaining of severe headache. On the husband's return at 12, noon, he found his wife still in bed, uncovered, cold, unconscious, and apparently dead. Hastily summoned, I found the woman cold, rather rigid, and almost pulseless, and having an occasional jerk of the muscles. It was in midwinter and the fire had burned out; this was rekindled, the body wrapped in blankets, artificial heat applied; strychnine, digitalis, whiskey, and nitro-glycerin given hypodermatically, followed later by atropine. After seven hours a change for the better took place, and during the following day the woman was delivered of a stillborn child. She made a good recovery. All of the patients have since borne other children, without any manifestations of eclampsia.

NEW DEVICE.

A COMBINATION OF DROPPER AND HYPODERMATIC SYRINGE, WITH IMPROVEMENTS ON BOTH.

BY CARL SCHULIN, M.D.,
OF HELENA, MONTANA.

THERE is some difficulty in keeping a common hypodermatic syringe perfectly clean and aseptic, on account of the piston and of the sharp angle between the lower end of the barrel and the attachment of the needle. Koch, in his syringe for the hypodermatic injection of tuberculin, therefore dispensed entirely with the piston, substituting for it a rubber bulb, and also removed the attachment at the lower end of the barrel, allowing this to end in a blunt point, to which the needle is attached. (See figure, *d*.) When I first saw Koch's syringe I was struck by the similarity of its barrel to that of a dropper, and concluded to have Messrs. Tiemann & Co. make for me a combination of a dropper and a syringe for the use of the so-called hypodermatic tablets.

As the attachment of the rubber bulb of the common dropper to the upper end of Koch's barrel (*c*) is not a thoroughly secure one, I replaced the plain bulb by a perforated stopper-bulb (*b*). This is easily applied, holds

fast, and has the advantage in being free from the fault of the ordinary dropper, that as soon as the point of the dropper is turned upward the fluid runs into the bulb, where it is liable to be contaminated.

Mr. Walter F. Ware, of Philadelphia, has devised for the same purpose quite an ingenious contrivance, a stopper with two canals and provided with two valves, alternating on the opposite ends of the canals. This stopper is put into the upper end of the barrel, and a common rubber bulb is applied over it. One can readily see how much simpler my device is and how much more cheaply it can be manufactured, and it works quite as well, because the air in the fine canal does not allow any fluid to pass.

As for the syringe, I did not approve of Koch's rubber bulb, but I disposed of the piston in another way. In the common syringe the upper end is provided with only a plain cover, but I made the cavity of the barrel continuous with and of the same caliber as that of the cover (*a*), so that it is possible to withdraw the piston fully into the cover and remove both together. In reapplying the cover the piston easily slips into the barrel and the difficulties attendant upon replacing the piston of the ordinary syringe are avoided. At the lower end of the piston the rod bears a plate of hard rubber which separates the leather of the piston from the liquid in the barrel, and which may also be drawn up into the cover.

To make a perfectly aseptic injection one first cleans the empty barrel (*c*) carefully, applies the stopper-bulb (*b*), and fills the barrel by suction. Then one applies a little rubber cap or the finger to the point of the barrel, removes the stopper-bulb, and applies the cover with the piston, thus transforming the dropper into a syringe.

For the use of hypodermatic tablets one fills the barrel partly with water, puts in a tablet, and dissolves it by shaking. From a scale on the barrel one may see how much water the barrel contains, and may inject either the whole or whatever fraction one pleases. With the stopper-bulb one may instil a given number of drops into an eye or administer solutions in the same way by the mouth, always having control of the dosage by the scale on the barrel and the known dose of the medicine which the tablet contains.

The barrel, when closed at the point by a cap and at the upper end by the stopper-bulb, may also serve as a bottle in which one can carry a soluble drug, which will thus always be ready for internal or hypodermatic use.

Messrs. Tiemann & Co., of New York, have undertaken to manufacture this combination of dropper and syringe in a small case, which will also contain a certain number of bottles for a selection of tablets.

Dr. Lawrence F. Flick has resigned from the Medical Staff of the Rush Hospital for Consumptives and Allied Diseases.

MEDICAL PROGRESS.

Sarcoma of the Dura Mater.—HARRIS (*Medical Chronicle*, vol. xviii, No. 1, p. 37) has reported the case of a woman, twenty-nine years old, in which, for two years, there had been progressive loss of power in the extremities of the left side, and for one year progressive impairment of vision. There was occasional headache and occasional vomiting. There had never been a convulsion, and there was no history of traumatism, syphilis, or tuberculosis. The woman was unable to count fingers, and could just distinguish light from shade. The pupils were dilated and failed to react to light. There was slight divergence of the axes of the eyeballs and slight nystagmus. There was bilateral optic neuritis. The naso-lateral fold was not so marked upon the left as upon the right. The upper lip could not be raised as high on the left as on the right. The tongue was protruded slightly toward the left. The plantar reflexes and the knee-jerks were present. On attempting to elicit ankle-clonus a few jerks would occur. The urine contained no albumin. The woman stated that she had been advised to have an operation performed upon the head, but she had declined. Two days after coming under observation she suddenly had a slight epileptiform attack and died. On post-mortem examination the skull-cap was found to be normal externally, but on its internal aspect, on the right side, three inches from the sagittal suture, two and a half inches behind the coronal suture, and with its anterior edge three-quarters of an inch behind the groove for the middle meningeal artery, there was an excavation an inch in diameter and extending to the outer table of the skull. The dura mater in a corresponding situation was somewhat prominent, projecting slightly above the surrounding level and adherent by its cerebral surface to a growth that apparently arose from the inner aspect of the dura and projected into the right cerebral hemisphere. The mass was wedged in among the convolutions of the motor area of the right side, displacing and compressing the convolutions immediately beneath it. It extended a distance of three and a half inches from the junction of the anterior and middle thirds of the middle frontal convolution anteriorly to the lower half of the fissure of Rolando posteriorly. Superiorly and internally the inner border of the growth was parallel with the great longitudinal fissure and corresponded with the sulcus between the first and second frontal convolutions; inferiorly it extended to within one-eighth of an inch of the horizontal limb of the fissure of Sylvius, a small layer of gray matter and pia mater intervening. On incision from above downward, the growth was seen to extend in the shape of a wedge for a distance of two inches, a thin layer of gray matter being traceable beneath, between which and the lateral ventricle a layer of white matter, only a quarter of an inch thick, intervened. The tumor was of grayish color and moderately firm in consistence; its cut surface presented a finely granular and slightly spongy appearance. There was nowhere evidence of softening. Microscopic examination of sections of the growth disclosed the structure of a sarcoma undergoing psammomatous change.

Rupture of the Esophagus.—HARRISON (*Lancet*, No. 3632, p. 784) has reported the case of a man, forty-seven

years old, with impaired appetite, who had been losing flesh for about six months. Two weeks before coming under observation he had an attack of diarrhea, and, following this, vomiting occurred in paroxysms at intervals of three or four days, together with eructations of fluid into the mouth. The amount of fluid rejected was considerable and led to the belief that there must be some dilatation of the stomach and possibly some obstruction to the passage of food from the stomach into the duodenum. The patient was conscious of a sense of accumulation of food in the stomach until relieved by vomiting. The abdomen was not distended and no neoplasm or enlarged glands could be felt. On palpating over the stomach, splashing sounds could occasionally be heard. There was no pain and there had never been hematemesis. Microscopic examination of the vomited matters failed to disclose the presence of blood or sarcinæ. The bowels were regular. The urine presented no abnormality. There was no evidence of disease of the heart or lungs. Nineteen days after coming under observation, after the swallowing of some arrow-root and whilst in the act of retching and vomiting, the man was seized with sudden and intense pain in the lower portion of the left side of the chest. He remarked to his wife at the time that he felt something burst in his stomach. Collapse soon developed, the temperature becoming subnormal. A little later, subcutaneous emphysema of the neck, cheeks, and upper part of the chest appeared. The area of cardiac percussion-dulness was found to have disappeared, and this region and the upper portion of the left lung were hyper-resonant on percussion. Death took place about thirteen hours after the sudden access of pain and collapse. Upon post-mortem examination a sharply defined longitudinal rent, about an inch and a half long, was found in the walls of the esophagus just above the diaphragm. Each pleural cavity contained about a pint of dark grumous blood, having the odor and appearance of the contents of the stomach. The face, neck, the upper part of the chest, and the abdomen down to the groins were emphysematous. The left lung was partially collapsed. There was air in the loose areolar tissue of the mediastinum, and here and there also in the sub-pleural tissue. At the pyloric orifice of the stomach a small carcinomatous nodule was found and the whole circumference of the orifice was thickened and indurated.

Fibrinous Coagula from the Kidney.—At a recent meeting of the Society of German Physicians of Prague, v. JAKSCH (*Wiener medizin. Presse*, No. 5, 1893, p. 185) reported the case of a man, thirty-nine years old, who was seized with a chill, followed by fever and abdominal pains. There was tenderness in the loins and the signs of acute nephritis. In the course of a few days a sense of resistance became appreciable over the left kidney; the urine became alkaline and contained, in addition to fatty leukocytes, hematoidin crystals, tube-casts and epithelium from the pelvis of the kidney, dendritic coagula of fibrin. Echinococcus hooklets could not be found. As the patient progressed to recovery the abnormal elements disappeared from the urine. There was no evidence of the existence of diphtheria or tuberculosis in the genito-urinary passages or of hematuria or chyluria. A diagnosis of abscess of the left kidney, probably in association with an echinococcus cyst, was arrived at.

THERAPEUTIC NOTES.

For Chlorosis.—The Paris correspondent of the *Lancet*, No. 3633, p. 892, gives a *résumé* of the treatment of chlorosis pursued by Prof. Hayem, at the Hôpital St. Antoine. The patient is kept in bed for two or three weeks, and subjected to a regimen consonant with the state of the stomach as determined by chemical analysis. Generally there is hyperpepsia, which is best combated by a diet of milk and raw meat—a tumblerful of milk and about three ounces of scraped raw meat at noon and at 5 P.M. At the expiration of two weeks, considerable improvement will be noted. Now, and now only, iron may be exhibited. The best, because the most assimilable, preparation is the protoxalate, of which from gr. jss to iij may be given twice daily, at the beginning of a meal. Constipation may be overcome by enemata, or by the administration of mucilaginous seeds, such as psyllium plantago. When the appetite has been restored, three meals of easily digested food may be given daily. After a month, the patient will have regained color and strength. She may then be permitted to leave bed, at first for two hours, then for four and six, and, finally, for the whole day. In five or six weeks the cure will have been complete. Great stress is laid upon the treatment of the hypopepsia, or hyperpepsia, that may exist. In case of the former, a tablespoonful of a 1 per cent. solution of hydrochloric acid in half a tumblerful of sweetened water, should be given after meals, concurrently with the iron protoxalate.

Quinine for Cholera.—Based upon previous experience, HUBERWALD (*Jahrb. f. Kinderheilk.*, B. xxxv, H. 3, p. 245) recommends the employment of quinine in the treatment of cholera. A grain and a half may be given every two hours for twenty-four hours and repeated during a second twenty-four hours if necessary. If vomiting be present and beyond control the drug should be injected beneath the skin. In the gravest cases subcutaneous injection must be unconditionally practised. For this purpose the hydrochlorate or the sulphate, dissolved in acid and diluted with water may be employed. Still better is the use of the carbamidated hydrochlorate. Of this, from 12 to 15 grains, dissolved in an equal part of water, may be injected. The preparation may be also administered, dissolved in water, together with extract of glycyrrhiza, to children that cannot swallow cachets. This method of treatment is also applicable to cases of cholera nostras.

Venesection in Thoracic Aneurism.—At a recent meeting of the Hunterian Society of London, PITT (*British Medical Journal*, No. 1684, p. 744) read notes of nine cases of thoracic aneurism, with or without aortic incompetency, in which repeated venesection had been followed by more or less permanent relief of symptoms. In one case the patient was profoundly comatose and on three occasions was restored to consciousness by venesection. Venesection was advised as a remedy only for acute symptoms, such as pain, cough, and dyspnea, and not with a view to promote consolidation of the aneurism by clot. Cases of thoracic aneurism should be treated by rest, the recumbent posture, potassium iodid in gradually increasing doses, and with as limited an amount of fluid as the patient will comfortably take.

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ENTERIC FEVER WITHOUT PYREXIA.

THE medical student whose pupilage is not limited to the few years spent at a medical college passes through two fairly well defined stages. When he has graduated and has received a license to practise medicine, he feels that he has been taught practically all in medicine that is worth knowing. Soon, however, he learns that, for one reason or another (and in some instances the explanation is more obvious than in others), there are many conditions and phenomena of disease with which he is quite unacquainted. As, little by little, he adds to his fund of knowledge, he realizes more and more fully how much there is really yet for him to learn, and it cannot excite comment that he should at times be awed by the apparent extent of his lack of information.

Among the first illusions to be dispelled by practical experience is the one of expecting to find typical cases of a given disease. Far from realizing this expectation, the young practitioner is soon struck by the fact that the atypical is the rule. Even of such a well-known disease as enteric fever, there are so many anomalous manifestations that a large experience is necessary to have seen the disease in its most varied aspects. This is largely due to the fact that there is much about enteric fever that we do not know—matters some of which are related to enteric fever alone, and others to the febrile process in its diversity of manifestation.

It is but too common to confound fever and pyrexia. So invariably are the two associated that, in the absence of the latter, one would be likely to exclude the former; and, as a matter of fact, actual demonstration of such an independence is wanting. The possibility of this dissociation, however, is forcibly brought to mind by the report of cases in which, in the absence of pyrexia, the other symptoms point unequivocally to the existence of enteric fever. Sufficient instances of the kind have now been recorded to make a distinct clinical group. The latest contribution to the subject is from the pen of DR. JULIUS DRESCHFELD (*The Practitioner*, No. 298, vol. l, p. 272), who reports four cases that presented the classical signs and symptoms of enteric fever, with the exception of pyrexia. One of the cases terminated fatally, but there is, unfortunately, no record of post-mortem examination.

Why pyrexia should be absent from a case of enteric fever is, in the present state of knowledge, not possible of explanation. The anomaly is not to be explained by the superficial character of the intestinal ulceration, for in some cases hemorrhage from the bowel has taken place, and in one of DRESCHFELD'S cases it is thought that perforation occurred. Until we know fully the mechanism of thermogenesis and thermolysis, as well as of thermotaxis, we can only speculate as to anomalies of pyrexia. In the absence of definite knowledge it may be logical to conclude that under these conditions there is some derangement of function of hypothetic heat-centers, in consequence of which these fail to respond to ordinary stimuli, either as a result of idiosyncrasy or of the action of some peculiar poison elaborated in the course of the febrile affection.

Whatever the explanation, or even in the absence of any explanation, it is important to recognize the clinical fact that there are cases of enteric fever, and probably of other infectious diseases as well, in which the symptom, pyrexia, which has hitherto been considered distinctive of the febrile state, may be wanting. This absence affords neither reliable prognostic indication nor definite therapeutic suggestion; but it calls for the exercise of the same care as if pyrexia were present. Perhaps we have here negative evidence of the fact that elevation of

temperature is not necessarily a dangerous manifestation.

THE THERAPEUTICS OF CHOLERA.

THERE is as yet no method of treating cholera of which in a given case it can be definitely predicated that it will lead to recovery. If a specific for cholera exist, it has yet to be discovered. With a correct knowledge of the etiology of the disease and a proper appreciation of the processes that attend it, we are, however, in a position to intelligently apply the lessons of experience and to analyze the results of a rational empiricism, controlled by demonstrated and demonstrable physiologic and biologic data.

Within the last nine months there have from time to time appeared in THE NEWS numerous articles and abstracts dealing with the various phases of cholera. It is our purpose to-day to indicate those therapeutic measures that recent experience has demonstrated to be deserving of the greatest confidence should the necessity for their employment arise.

The administration of opium for the control of the diarrhea has resulted in almost universal disappointment. The reason for this becomes apparent when we consider the indication to be met. The object to be attained is not the checking of intestinal peristalsis, with the attendant retention of the infectious cause of the disease and the products to which it rapidly gives rise; but, on the contrary, the destruction or the expulsion of the bacteria and the neutralization or elimination of their toxic contents or products. For the purposes last named calomel has proved the most efficient agent. A single large dose may be given early. Small doses given repeatedly at a later period exert a useful influence in allaying irritability of the stomach and controlling vomiting.

Salol, from which at first much was expected, has also disappointed; and there is little reason to expect better results from other purely antiseptic agents, such as naphthalin and the naphthols. HUEPPE (*Berliner klin. Wochenschr.*, 1893, No. 7, p. 162), however, reports satisfactory results from the employment of tribromphenol, especially in mechanical combination with bismuth. Of such a preparation he administered an initial dose of 15 grains, followed by doses of 7½ grains every two hours during the day and every three hours during the night, for a period varying from two to five days, when the dose was diminished.

It was hoped that tannic-acid enteroclysis would prove useful in neutralizing the poison generated by the cholera-bacilli within the bowel. While this hope was not literally realized, the injections rendered good service by reason of the heat and water, by their use, supplied to the body; as a matter of fact, the quantities of fluid employed (about two quarts) were not sufficient to reach beyond the ileocecal valve, conceding this to be passable by fluids injected into the rectum. The good accomplished by means of subcutaneous infusion of a physiologic (0.6 per cent.) saline solution (hypodermatoclysis) is likewise to be ascribed to the heat and fluid supplied. In a large number of cases of grave type and in the algid stage marvellous results (that were, unfortunately, only too often of but transitory duration) followed intra-venous infusion of the physiologic solution.

The four measures thus far named — calomel, enteroclysis, hypodermatoclysis, and intra-venous infusion—have proved themselves worthy of confidence and deserving of further employment in the treatment of cholera. What may be expected from biologic measures cannot yet be determined. Most of the studies in this direction seem to indicate that not much can be hoped for in the treatment of the established disease. It would appear as if the intoxication is so profound and so rapidly established that antidotes are unavailing unless given in the incipiency of the infection, *i. e.*, at a time when the diagnosis is scarcely possible. Whether or not protective inoculation, by strengthening the natural immunity, shall prove useful remains to be demonstrated. In the limited number of cases in which the anticholerin of KLEBS has been employed the results were comparatively favorable, but this method of medication is still in the experimental stage, and its place in our therapeutic armamentarium remains yet to be decided.

In a number of cases hot baths have been advantageously availed of in the algid stage; but, on the other hand, the fear is expressed that by the diversion of the blood to the surface of the body heart-failure may result.

UNMERITED CENSURE OF HOSPITAL PHYSICIANS.

A FEW days ago a child, suffering from an aggravated attack of diphtheric croup, was taken by its mother to the Children's Hospital in this city, but the officers of that institution declined to admit it.

We understand that a previous application at another hospital had been made, but we have no certain information as to this. The mother, on leaving the Children's Hospital, proceeded with the child to the office of the Board of Health at City Hall, coming in contact with a number of people in the street-car, as well as in the elevator at the Hall.

Great indignation has been expressed by some of the daily papers at this denial of refuge to the little patient; not on the child's account, however, but because of the exposure of other persons in the course of its journey to City Hall. The writers claim that the case should have been taken in and detained until the ambulance of the Municipal Hospital could be sent for. One journal says that this was the plain duty of the officials of the Children's Hospital, which "they wilfully refused to perform." This is a very grave accusation. Is it true?

Not long ago the managers of the hospital in question made special arrangements for the reception and isolation and proper treatment of cases of diphtheria and croup, but the Board of Health ordered their use discontinued and forbade the admission of such patients. An urgent appeal was recently made for the rescinding of this order, but it was unheeded.

Had this child been taken in temporarily, it is clear that no measures could have been adopted either for its treatment or for the protection of those already inmates of the house. There was no certainty whatever as to the length of time that might elapse before the arrival of the ambulance of the Municipal Hospital. Short or long, it would have been a period of peril for all those within the walls of the institution.

What should have been done, and what would have been done, but for the mandate of the Board of Health? The child would have been at once taken in, isolated, and subjected to proper treatment, with every appliance for preventing the extension of infection from it. Its clothing would have been destroyed. The Board of Health would have been immediately notified, so that it might enforce the disinfection of the premises where the disease had existed.

Very possibly those who so readily accuse the officials of the Children's Hospital of wilfully refusing to perform a plain duty are unaware of the splendid record of martyrs of our profession, of men who have lost their lives by their devotion to just such cases as that of this child. All over the world these risks are daily taken by physicians, calmly and without either hesitation or bravado. We can of our personal knowledge declare that in this instance there was no question on the part of the officials of their own safety or convenience. They simply obeyed the mandate of the Board of Health, and protected those who were already under their charge.

The plain common-sense of the matter is, and we speak from practical acquaintance with hospital management, that every such institution should be provided with the proper wards and other appliances for the isolation and treatment of diphtheric cases, and not be forbidden, but encouraged, to admit and treat them. We feel assured, although the point is not one which admits of proof, that many children have lost their lives because they were debarred from the benefit of treatment at the Children's Hospital by reason of the mandate of the Board of Health, and that there has been no compensatory saving in any way.

EDITORIAL COMMENTS.

The Dresden Sanitary Conference.—Although the articles of the international convention signed by ten of the nineteen powers represented at the recent Dresden Conference have not yet been officially promulgated, the *British Medical Journal*, No. 1687, p. 909, presents a summary of the chief provisions. The various Governments agree to notify the contracting States of every appearance of a focus of cholera in their respective territory, specifying the locality and the extent of the invasion, and designating the measures that have been adopted for the limitation of the outbreak. Foreign countries shall only put in force restrictions against the productions of the infected area and not against those of the whole country of which that area forms a part. Prohibitions against imports shall only be applicable to objects capable of transmitting the disease. A list is given enumerating the articles considered dangerous. This list, it is believed, contains only a comparatively small number of articles, and will not interfere with the transport of manufactured goods, textile or woollen fabrics, food-supplies, and fruit. The measures prescribed by which a Government may protect its frontiers, or which it may adopt against an infected area within its boundaries, are founded on medical inspection, disinfection of soiled linen, sanitary passports, and surveillance of passengers in the country to which they go during the time corresponding to the incubation of cholera, which is arbitrarily fixed at five days. Passengers on ships will not be isolated or disembarked unless there be cholera on board or there has been a case within seven days. Should isolation be necessary, it is to be assumed that it will be carried out by division into small groups, so as to avoid the detention of large numbers should a secondary outbreak occur. Special regulations may

be made and special precautions be taken in the case of ships carrying emigrants, by the country receiving these. In regard to the navigation of the Danube, provisional regulations have been made until such time as the town of Sulina, at its mouth, shall have provided itself with a proper water-supply. A further conference is to be held at Paris at a time to be announced.

A Professorship of Mental Diseases, etc., at the University of Pennsylvania.—The Trustees of the University of Pennsylvania have elected Dr. Charles K. Mills, Professor of Mental Diseases and of Medical Jurisprudence. Public and professional sentiment has become more and more pronounced in favor of both the didactic and clinical teaching of insanity to medical students and to physicians taking post-graduate courses. As long ago as 1871, the Association of Medical Superintendents of American Institutions for the Insane, now the American Medico-Psychological Association, adopted resolutions strongly urging the delivery by competent professors of complete courses of lectures on insanity and on medical jurisprudence as connected with disorders of the mind, and the subject has again and again been brought before the profession by societies and journals. It is especially important, as is said in a recent circular issued by the New York State Commission in Lunacy, in view of the fact that in a large majority of cases the presence of mental disease, in the first instance, must necessarily be determined by the general practitioner—usually the family physician. Dr. Mills has long been known as a profound student of insanity, and is most admirably fitted by experience and investigation to carry forward the work to which he is called. His lectures on mental diseases will be chiefly clinical and will be open as an elective course, like other clinical lectures, to the third and fourth year men. The Professorship of Medical Jurisprudence will include the delivery of lectures, which will be compulsory for the students of the auxiliary department of medicine and elective to the fourth year men. We congratulate the University and the profession on this progressive and excellent movement.

The Danger of Anesthetization by the Operator.—According to the *Canadian Practitioner* of last month, a house-surgeon of a Toronto hospital "decided to administer a small quantity of chloroform before operating" on the frostbitten toe of an able-bodied laborer. After giving a little more than half a dram, "the doctor noticed that the pulse suddenly became weak and the breathing irregular," and "energetic efforts to revive the patient failed to prevent death." Now this house-surgeon is described as "a thoroughly competent, careful, and reliable man." But if he was competent he knew that chloroform might kill, and no careful man would have run such a risk. On this occasion he surely did not prove reliable.

The writer winds up by saying: "The lesson to be learned is plain, and in the interest of both the profession and the public: No one should attempt, in any particular case, both to administer an anesthetic and to perform an operation." If this lesson was still to be learned in Toronto, the profession there cannot have noted the current medical literature of the last forty years.

We are told that it was fortunate for this house-surgeon that an autopsy was made by competent and trustworthy men, who were able to exonerate him from all blame, because they found "brown atrophy" of the dead man's heart. He would have been more fortunate if his teachers and chiefs had warned him not to take such a risk.

A Question of Memory or of Intellectual Fitness.—The letter of Dr. Ball, in another column of this issue of THE NEWS, raises an important question. There can be no doubt that our present method of final examinations places a reward upon the simple mnemonic power of the student, out of all just proportion. A slow student, who has ploddingly but thoroughly done his work, acquiring a first-hand perception of disease and therapeutics, is far and away distanced by some flashy "crammer" for examinations who happens to be possessed of a good memory. But the cure advocated by Dr. Ball is opposed by the underlying fact that our system of medical education is still too much based upon the didactic lecture, and that those who are in the teaching business to make money, or its equivalent, an enlarged consultation-practice, wish great droves of students, and wish to make them into practitioners with the least trouble possible. To carry out the excellent and desirable plan suggested, the teaching body must be tremendously enlarged, the character of the work revolutionized, the personal acquaintance of teacher and student must be intimate, and instead of talking at a half thousand men one knows nothing about, the pupil must be drawn out, educated in an etymologic sense, and made himself to learn by the teaching of facts and under the guidance of the instructor. All this requires an endowed institution, the limitation of professorial salaries, and medical education made both genuinely medical and truly educatory—not the monopoly of income and fame by mercantilism masquerading as medical education.

Conference of State Medical Examining and Licensing Boards.—We desire to call especial attention to the announcement in another column of THE NEWS of the Third Annual Conference of State Medical Examining and Licensing Boards, to be held at Milwaukee, June 7, 1893. Much good has been accomplished both for the profession and for the public by the organization in many States by legislative enactment of Boards of Medical Examination and License, in whose hands is placed the responsibility of determining to whom shall be intrusted the care of the health and lives of the people. It is earnestly to be hoped that before long such salutary regulations may be adopted by every State and Territory of the Union. From little beginnings the movement has grown to mighty proportions, and its influence for good cannot be adequately estimated. A number of most important questions will be presented for consideration at the coming conference. The names of the officers constitute an indication of the dignity of the body and furnish a guarantee of the character of the work that may be expected.

The Nobility of Medicine is admirably illustrated in the work of the Duke Karl Theodor, of Bavaria, who recently performed his two thousandth successful opera-

tion for cataract, at Munich, where he has fitted up and maintains an institution for the study and cure of the diseases of the eye. The professional life of the Duke is a most interesting one. Graduating in 1872 from the University of Munich, he immediately entered upon the gratuitous practice of ophthalmic surgery amongst the poor. Near his château he founded a district hospital for the treatment of the diseases of the eye in which he performed many operations, his wife, the Duchess, acting as chief nurse. In the summer he established an ambulance hospital in the Austrian Tyrol. Except in peculiar cases, in which a fee is required, none but the poor come under treatment; all that can pay being transferred to colleagues. In addition to his noble work of philanthropy, Karl Theodor has made numerous valuable contributions to medical literature.

Credit to Whom Credit is Due.—A correspondent calls attention to the fact that the admirable police and medical arrangements during the recent naval review were essentially a reproduction of those successfully adopted in the city of Philadelphia in 1887, at the time of the Constitutional celebration. The guiding idea of the plan is thorough organization with centralization of authority: a practical head, military precision, telegraphic or telephonic communication between all points, police patrols, sanitary stations provided with ambulances and under the charge of surgeons.

"The Single Remedy," praised by the homeopaths, is well illustrated by *The Hahnemannian* for May, 1893, in which seven or eight pages of remedies for cholera are enumerated, all solidly printed one after the other, and in the customary medieval jargon of contractions that would give a phonetic speller an epileptic fit of envy. If the single remedy is the proper thing, which of the several hundred so amusingly listed should it be? Why not mix 'em all up and label the mixture, OMNIA, like Swan, the New York homeopathic pharmacist?

A Willing Dupe.—Scarcely has Mr. Stead been disabused of his delusion that carcinoma can be cured by means of bottled electricity and the like, than he becomes the willing victim of another delusion. This latest consists in the discovery of a fourth dimension, the practical value of which lies in the power of certain persons (of whom Mr. Stead is naturally one) to communicate not only directly with friends at a distance, but also with those of other spheres. To us here it would appear as if Mr. Stead's mental condition might become a matter for consideration by a commission in insanity.

Protective Inoculation against Cholera.—It is announced that M. Haffkine has inoculated some four hundred persons in India with cultures of comma-bacilli, according to the method elaborated by him, for the purpose of conferring immunity against cholera. No unpleasant symptoms were observed. An opportunity of demonstrating the protective value of the inoculations has not yet offered.

Munificent Philanthropy.—Baron Nathaniel Rothschild has offered to present to a society of charitably disposed persons in Vienna, who were endeavoring to collect funds to found an asylum for patients affected with diseases of the chest, his chateau, together with an extensive estate and pleasure-grounds, situated in the Styrian Alps, and worth 5,000,000 florins ($2,100,000).

The Medical Examiners Bill passed by the Pennsylvania Legislature several weeks ago has been ratified by the Senate and now goes to the Governor for his signature, which there seems no reasonable doubt it will receive.

SELECTION.

AMUSIA.

THE term amusia, recently introduced into medical momenclature, may be said to denote with regard to the musical faculty about what the word aphasia, in its most comprehensive use, imports with regard to the faculty of speech. Some interesting examples of loss or impairment of the ability to produce or to comprehend music are on record, and a condensed account of the more important observations bearing on the subject is given in a "Revue Générale," by Dr. Paul Blocq, published in the *Gazette hebdomadaire de Médecine et de Chirurgie* for February 25th.

Aphasia is not always accompanied by amusia, as was mentioned by Bouillaud so long ago as in 1865. There is a well-known story of a certain aphemic who sang the *Marseillaise* with the only articular sound that he could make, and Bernard speaks of an aphasic who sang that melody and the *Parisienne* with the substitution of *tan, tan, tan* for their proper words. Proust had a patient who could write music, although incapable of reading it. A still more curious case was recorded by Grasset in 1878, that of an officer who, while he could articulate only *pardi* and *b* in his attempts to speak, could sing the words of the first verse of the *Marseillaise* with the utmost correctness. Charcot's authority is given to the story of a trombone-player who lost his capability of performing on the instrument, although he had preserved all his other faculties.

Blocq credits Knoblauch with having established the autonomy of such a pathologic state as amusia in 1888. In 1891 Wallaschek made an important classification of the varieties of amusia, distinguishing motor amusia, in which the patient comprehends music, but has lost the power of singing; sensory amusia, in which the subject can no longer distinguish sounds; paramusia, in which the subject sings, but with mistakes in time and note; musical agraphia, or loss of the power to write notes; musical alexia, loss of the ability to read music; and musical amimia, loss of the power of playing on an instrument. Blocq, like Onanoff, adopts an analogous classification, distinguishing a receptive, or sensory amusia, and a motor or expressional amusia, the former including auditory amusia and musical alexia, and the latter comprising true amusia (loss of the power of singing), musical amimia, and musical agraphia. True sensory amusia may be termed musical deafness, and musical alexia may be called musical blindness.

Concerning the pathologic significance of amusia almost everything is yet to be learned, but it is certain

that Blocq has, by his analysis of the data now in our possession, done much to facilitate the necessary investigation.—*N. Y. Med. Journ.*

REVIEWS.

HUMAN MONSTROSITIES. By BARTON COOKE HIRST, M.D., Professor of Obstetrics in the University of Pennsylvania, and GEORGE A. PIERSOL, Professor of Histology and Embryology in the University of Pennsylvania. Part IV, illustrated with ten photographic reproductions and forty-six woodcuts. Philadelphia: Lea Brothers & Co., 1892.

IN the concluding volume of this fine work is completed the consideration of the composite, the double parasitic, and the triple monsters.

The best-known instance of the dicephalic monstrosity that has lived for any length of time is that of the Tocci boys, born in 1877 and still living. All the others (Marie-Rose Drouin, Rita-Christina, etc.) except the Scotch boys (1490) who lived twenty-eight years, lived but a short time. Ischiopagi also do not long survive birth, owing to atresia of the urethra and anus. Of pygopagi the examples are more rare, but the chances of life are good. Of this class, especially to be noted are the Hungarian sisters Helen and Judith (b. 1701), who lived twenty-two years; the North Carolina negro twins, Millie and Christine, who were born in 1851 and are still alive; and the Bohemian twins, born in 1878.

With the pygopagi ends the study of the terata katadidyma, or double monsters divided from above downward. In the terata anadidyma the division is from below upward. The dipygus has duplicity of the pelvis, the pelvic extremities, and the genitalia, but a typical dipygus with two equally developed pairs of legs is unknown. The best-known approximations, Blanche Dumas and Mrs. B., are described and illustrated. Besides dipygus, we have in this class the syncephalus and craniopagus, with their more common varieties, described and illustrated.

In the terata anakatadidyma there is a separation of the upper and lower bodies, the junction being confined to the region between the umbilicus and the head. Varieties of this class are the prosopothoracopagus (the union is by the upper abdomen, the chest, and faces, the spinal columns being distinct); the thoracopagus and sternopagus; the omphalopagus and xiphopagus, the best-known example of the latter class being the Siamese twins. An excellent account of the life, death, and necropsy of Chang and Eng is given. Four operations have been performed for the separation of omphalopagi or xiphopagi. The authors are of the opinion that in future, owing to improved technique, etc, better success awaits these attempts.

Of double parasitic monsters we have accounts of the heterotypus, the heteralius, polygnathus, polymelus, endocyma, diprosopus parasiticus, dicephalus parasiticus, ischiopagus parasiticus, dipygus parasiticus ("la dame à quatre jambes," Laloo, etc.), syncephalus parasiticus, craniopagus parasiticus, thoracopagus parasiticus, polygnathus, epignathus, and endocyma.

Of triple monsters, only two or three instances are on record.

A most valuable addition to this volume is the bibliography, which shows the large measure of popular interest that has always existed in reference to this subject.

We have ten more of the marvellously beautiful plates, showing vividly the appearance of dicephali omphalopagi and heteropagi.

Not a word of criticism is allowable in reference to this superb work, and authors and publishers are to be congratulated upon its execution and completion.

A SYSTEM OF GENITO-URINARY DISEASES, SYPHILOLOGY, AND DERMATOLOGY. By Various Authors. Edited by PRINCE A. MORROW, A.M., M.D., etc. With illustrations. In three volumes. Vol. I. Genito-urinary Diseases. 8vo, pp. 1074. New York: D. Appleton & Co., 1893.

THIS latest addition to the already abundant literature of the surgery of the genito-urinary organs is a large and handsomely gotten-up volume. It is the outcome of the labors of thirty-one authors: New York furnishing twenty-three; Boston, three; St. Louis, two; Chicago, Philadelphia, and Montreal, one each. This multiplicity of writers has necessitated a somewhat minute subdivision of the subject-matter. We find the diseases of the penis treated in one section, diseases and injuries of the urethra in another; those of the scrotum are separated from those of the testicle, which organ has three distinct articles devoted to it, besides a special one on hydrocele. Endoscopy, or the specular examination of the urethra, and cystoscopy, or that of the bladder, are likewise placed apart from one another. The subject of gonorrhea is divided up under six distinct headings.

With the teachings of this book we have no fault to find; they seem to be sound, and in accord with the views in general acceptance at the present day. The article on Stone in the Bladder, by Dr. Cabot, of Boston, is a particularly good one; and Dr. White, of Philadelphia, discusses Urethral Stricture with clearness and force. But we do not find in the remainder of the work such novelty of theory, of fact, or of statement, as should warrant us in ranking it above other and less pretentious treatises which are already regarded as standards.

The title of one of the sections, "The Cystites"—the suppurative inflammations of the bladder—seems to us to be unfortunate, as conveying the idea that these lesions differ in kind and not in degree. We object also to the term "Urinary Fever" as meaningless and unscientific. Another heading, "Tuberculosis Uro-genitalis," is awkward and pedantic; it is certainly neither good American, good English, nor good Latin.

We note with regret the tendency on the part of most of the writers to take what a well-known litterateur has recently described as a colonial attitude toward foreign authorities. We find no mention of some important records of the experience of American surgeons, which would have added materially to the value of this work.

As might be expected, the style of the different articles varies greatly. In some of them there is very careless writing. Thus, we are told that non-infectious urethral discharges "are of comparatively little importance, and this in proportion to the causes from which they arise" (p. 143); "The rigid urethral walls do not collapse like in the deeper portions" (p. 209); "We are indebted to

Bumm for the anatomical changes in gonorrheal conjunctivitis" (p. 227); "the front urethra" (p. 416). Besides these blemishes, there are very many misspelt proper names, and a noticeable number of typographic errors. One of the contributors will find his name spelt in three different ways.

In some of the articles authorities are quoted by name only; in others the references are also given in the text; while in still others the bibliography is placed at the end in tabular form, but without either chronologic or alphabetic arrangement.

With excellent illustrations, clear type, and good paper, the appearance of this volume is highly attractive.

Transactions of the American Surgical Association. Volume X. Edited by J. Ewing Mears, M.D., Recorder of the Association. Philadelphia: Wm. J. Dornan, 1892.

It is impossible, in the limited space at our command, to call attention to the points of interest of each and all of the goodly number of papers contained in this volume, all of which are of a high order of merit. Not only the papers themselves, but the discussions which they brought forth from the distinguished body before which they were presented, cover such a wide and varied field, and record so much that is interesting and valuable as contributions to the literature of surgery, that we feel that we are only paying a just tribute when we say of this volume that it is a worthy companion to those which have represented the work of the American Surgical Association in former years.

Merely to allude to some of the papers, that by Dr. John B. Roberts, on "The Treatment of Fractures of the Lower End of the Humerus and Base of the Radius," deals with a subject of interest to the general practitioner, as well as the surgeon, and elicited a lengthy discussion. A paper by Dr. N. P. Dandridge, of Cincinnati, on the "Surgery of the Tongue," is an excellent, comprehensive view of a subject of great interest. Dr. Robert F. Weir's contribution on "Gastrorrhaphy for Diminishing a Dilated Stomach," is a valuable addition to the more recent advances in the surgery of that organ; and Dr. Dennis's report of some cases of "Cerebral Tumor," in which he records the results of medical treatment, is a striking communication on a subject that has attracted much attention in recent times. We regret that we cannot do more than mention the other contributors, Stimson, Cabot, Warren, Nancrede, M. H. Richardson, E. H. Bradford, Homans, Carmalt, McCann, Weeks, Wharton, Gerrish, and Deaver—all of whose papers contain much that will repay the reading, as will also the excellent address of the President, Dr. Conner.

Worthy of passing note here is a brief historical sketch at the end of the volume, of the sponge used at the first administration of ether for anesthesia, by Dr. W. T. G. Morton, at the Massachusetts General Hospital, in 1846. Accompanying the sketch are two very good phototypes of this sponge.

In conclusion, we take pleasure in saying that the volume gives evidence of careful editorial work, and that its appearance is as attractive as that of its predecessors.

A Complete List of the Officers and Fellows of the American Surgical Association, together with an Alphabetically Arranged Index of Vols. I–X, 1880–1892. Philadelphia: William J. Dornan.

This list, which is published in pamphlet form, also appears in Vol. X of the *Transactions*. It is an excellent idea, for library purposes, to have published it separately. As the title implies, it contains not only the roll of the Officers and Fellows of the Association, but an index, arranged both as to name and subject, covering the ten volumes which have been issued. On looking through this index one cannot help being impressed by the amount of valuable work that has been done by the Association. It will doubtless be very convenient to writers and others having occasion to consult the *Transactions* to have this index to refer to.

Notes on the Newer Remedies. By David Cerna, M.D., Ph. D., Demonstrator of Physiology in the Medical Department of the University of Texas, Galveston, etc. Pp. 177. Philadelphia: W. B. Saunders, 1892.

The enormous number of new drugs and proprietary pharmaceutical preparations forced upon the market within the past few years renders any attempt to select those of undoubted value for such a compilation as the present volume a task of considerable magtude. Dr. Cerna, by his extensive studies and experimental research in the laboratories of the University of Pennsylvania, has been admirably prepared for such a work, and he has demonstrated his ability to carry it through in a satisfactory manner. His "Notes" compare favorably with recent works of a similar nature. However, in his effort to condense and eradicate he has left such a skeleton in a number of instances that the information advanced can be of but little practical service to the therapeutist. Mistakes also have been made, and some unworthy drugs have been included among the worthy. Notably is this the case with the so-called alkaloid "stenocarpine," which two or more years ago was proved to be nothing more than a mixture of cocaine and atropine. No attention whatever has been called to the extremely unfavorable effects that have frequently followed the use of tuberculin injections; nor is the really extensive applicability of ichthyol to surgical and gynecologic purposes indicated. Notwithstanding, Dr. Cerna's "Notes on the Newer Remedies" will bear a second reading, and it is to be hoped that the intimation that the work may be the "groundwork for a larger volume in which the physiological and therapeutic actions of the new medicaments . . . will be duly discussed," will amount to a realization. There is room for such a volume.

Syphilis and the Nervous System: being a Revised Reprint of the Lettsomian Lectures for 1890. By W. R. Gowers, M.D., F.R.C.P., F.R.S., etc. 8vo, pp. 131. Philadelphia: P. Blakiston, Son & Co., 1892.

In the preface to this revised and enlarged reprint of the Lettsomian Lectures for 1890, Dr. Gowers acknowl-

edges his indebtedness to Dr. D. D. Stewart, of Philadelphia, for assistance in reading proof and preparing the complete index which adds so much to the facility of reference. The subject is, of course, both philosophically and practically treated in that rare style of which half a dozen English-writing physicians seem at present to be the only masters. Like all really great authors, Dr. Gowers modestly prefers not to assert originality rather than to risk claiming credit for the work of others. The present status of knowledge is fully exhibited. Among the important distinctions made, which show "what's in a name," is the restriction of the term "specific" to lesions not only "luetic" in origin but exhibiting characteristics not found in any other disease.

Admitting that symptoms may be relieved and overt lesions prevented or healed, Dr. Gowers does not consider syphilis curable in the sense that the virus that lies back of lesions and symptoms is ever fully eradicated or antagonized. Furthermore, lesions not specific, but secondary, may be induced, and these may be of such a nature as to cause irreparable damage. Secondary lesions, too, may give rise to continuing symptoms after the specific cause has been contracted, so that long-continued treatment by iodides or mercury may be a grave and dangerous mistake. Long-continued use of iodide may induce tolerance on the part of the morbid cells or morbific agent, and an instance is given in which a cerebral gumma developed and proved fatal while the drug was being taken. Three elements of the morbid process furnish indications for treatment: the specific cause and lesions; the secondary damage to nerve-elements, and the symptoms due to the latter. Empirical therapeutics is not to be despised.

Diseases of the Eye. A Practical Treatise for Students of Ophthalmology. By George A. Berry, M.B., F.R.C.S. Ed. Second edition, revised and enlarged, with colored illustrations from original drawings. Philadelphia: Lea Brothers & Co., 1893.

The first edition of Mr. Berry's treatise appeared in 1889 and contained 650 pages of text. The value of the work has already made necessary a second edition, which has given the author the opportunity for revision and increase of the number of pages to 705. In the present volume, the chapter on the Examination of the Eye has been placed at the commencement, where it belongs. It was sadly out of logical order in the first volume. A noteworthy feature of both volumes is the insertion directly into the text of colored illustrations. Many of these are certainly most excellent, but some, we are forced to confess, are disappointing. "The normal fundus," p. 35, is very perfect, but if we had not been assured of the fact that the figure on page 36 was the "normal macula," we should have supposed it to be the picture of a very pathologic macula. The illustration of the early stage of albuminuric retinitis is beautiful and correct, as is also that of episcleritis, but nothing can excuse the abominable representations given of subconjunctival dislocation of the lens (p. 180), of opaque nerve-fibers (p. 224), and of conical cornea (p. 144).

The chief criticism of the work, and it is one that strikes us strongly, is the non-realization of the promise of the title-page. "A practical treatise for students," the work may be, if the student is one of the hundred or thousand who has been well endowed by Nature, intellectually, and has had the best preliminary educational advantages. The English medical student, we hope, may comprehend the pages of algebraic and mathematic formulæ that may adorn but do not, to the general, enlighten. There is almost everywhere too much taken for granted, and the "student" will too frequently find his judgment dazed rather than clarified. There is a lack of plain, every-day explanation, such as may be readily comprehended by the untutored and practical mind. If, for example, one not instructed in the matter should attempt to refract a pair of eyes, following only the directions given, he would find himself landed in a haze of indefiniteness and a multitude of doubts.

The mention of refraction recalls the fact that Mr. Berry, like most of our European confrères, gives us no instruction as to the use of a mydriatic, and hardly alludes to the thousand difficulties and inexact results that we find without its use, and the intricate problems that surround the details of finer refraction-work as carried out in this country. Nothing is said as to the Javal and Schiötz ophthalmometer, nor of Knapp's roller-forceps operation for trachoma.

Space does not permit a detailed review of this, in many respects, admirable treatise, which, despite its obvious faults, has many peculiar merits, and will henceforth occupy and hold its place as one of the best treatises upon the subject we have. But we cannot forbear emphasis of the fact that its methods and merits make it a helper for the specialist rather than a handbook for the general practitioner, the beginner, or student. It is needless to say that the volume is admirably reproduced so far as the printer and publisher are concerned.

SPECIAL ARTICLE.

THE PRACTICE OF MEDICINE IN ONTARIO, CANADA.[1]

By J. P. ARMOUR, M.D.,
of St. Catharine's.

The practice of medicine for the 2,112,000 citizens of this province is placed in the hands of 2,600 physicians, the druggists, and patent medicine-venders. To the profession is given the exclusive privilege of diagnosticating and prescribing for the ailments of the citizens; the druggists are legalized to dispense and sell drugs to the public; while the profits resulting from the sale of patent medicines are open to every citizen.

When we take into consideration the arduous labor and expense connected with the preparation, and the close application necessary while attending to the duties of the practice of medicine, there are perhaps no other professional men so poorly remunerated for their services as those engaged in the practice of medicine. This is not owing to lack of privilege—the law and its administration favor a liberal remuneration—but it is entirely due to the misuse of the privileges with which the profession is intrusted. The chief causes of lack of remuneration are overcrowding, charity practice, and general bad business management.

[1] Abstract of an address delivered before the Majoia District Medical Association.

The public is impressed with the view, and it is but the reflection of expressed professional views, that the practice of medicine is the most remunerative calling we have. The pupils of our schools have seen the doctor occasionally called into their family, for which he had been paid what appeared to them a very liberal fee—but they thus incidentally learn that the doctor is a very busy man; that he has been on duty night and day; that several horses are requisite to drive him to his patients; and conclude that such a privilege is worthy of their highest ambition, and they determine to sacrifice all else to be a doctor.

There is another view of this. Ask a dealer in any of the more expensive luxuries who are his most liberal patrons, and he will tell you the merchants and manufacturers, and that physicians rank only among the farmers and mechanics. A banker will give you the same reply. Examine for yourselves the holders of bank and other stocks, and you will find practically none held by members of the medical profession, unless acquired by marriage or inheritance. Ask the county registrars what proportion of real estate is held by the profession, and they will tell you, very little. From the retail dealer in the common necessaries of life you will learn that physicians are moderate and economical livers. The question arises: What has become of these large earnings? The answer is: They have never existed—they are purely fictitious.

The insane rush of young men, and women, too, into the profession is chiefly owing to the extravagant puffing of a considerable portion of its members regarding the financial results of their labor. I have a couple of physicians in mind with whom I was familiar both as a youth and after entering the profession, whose careers are somewhat typical of the "booming" class. The one was the leading physician of a large town. He claimed and was generally accredited with doing a practice of $25,000 a year. He lived quite inexpensively, except in the matter of horses, several of which he always kept to encourage business, and after struggling with a practice of this kind for twenty-eight years, he suddenly collapsed, leaving his creditors in for over $20,000. The other practised in a small village, and for years had done a tremendous practice; kept half a dozen horses, slept little, and had rarely time to take his meals; he lived quite inexpensively, except in the matter of horses; he took but one holiday during his whole career; and he affected, and was generally supposed to be possessed of, fabulous wealth; and after a laborious professional life of forty years, departed, leaving an estate valued at less than $5000. I can name a score of men in the profession to-day, who have been lured there by the boasting of these two. This unmanly habit afflicts the profession to a disgraceful extent, and does it more injury than any other affliction to which it is subjected.

A large portion of the legitimate income of the practice of medicine has come to be looked upon by the public as a gratuity the profession owes and is in duty bound to contribute to the poor and dishonest afflicted. This pernicious system of indiscriminate gratuitous medical service has arisen chiefly from a desire to promote the narrow, selfish interests of individual members. In most of the centers of population, hospitals exist for the care and treatment of the afflicted. As they are at present conducted, they are so many encroachments on the legitimate earnings of the profession, and a direct burden on its charity. The grocer, the butcher, the merchant, the lawyer, the druggist, are all liberally paid for what they do or supply for their maintenance, but the best medical skill is always at their disposal, free. In the chief centers, where this custom has originated, those connected with medical schools find it to their advantage to give their services gratuitously to hospitals and dispensaries, that they may have abundance of clinical material for their students. They are indirectly well paid for these services by students' fees and the professional prestige that attaches thereto; but it is a serious loss, not only to other members living in these centers, but to the profession at large, on account of the precedent it establishes. In this way a public opinion has been created and is maintained, exacting gratuitous service for all who seek it.

It is difficult to understand why the whole burden of this charity should be assumed by the profession. It is not so in European countries. There they have the parish doctor, who is paid to attend the indigent; but here the rivalry for personal popularity by the exhibition of competitive charity has resulted in the whole burden being borne by the profession. What other calling allows a large portion of the means of livelihood to be exacted as charity? It is perfectly clear that the medical men themselves have established and are perpetuating this practice of costly charity that should be borne by the whole community.

We have in this connection the contract labor for lodges, etc., by which physicians place themselves under the patronage of the worthy chief wranglers, whereby they are privileged to examine for admission, attend in sickness, and supply them with medicine, for an insignificant percentage of the regular fees for such service. Many of these fraternal societies live on the charity contributed by physicians, and at the same time hold them under great obligation for their patronage; and still we hear of physicians entering into competition to secure the burden of bestowing this charity with the vague hope of indirect personal benefit, which we all know rarely, if ever, materializes. Those who are not connected with such societies know how the members will occasionally come to them and tell them that they have their lodge doctor who is bound to attend them free, but they wouldn't have him to attend their dog, if it was ill—in just the way this same class of patients speak of other physicians, who have not bound themselves to bestow on them their semi-gratuitous professional skill. No one will question that this contract labor is injurious to the financial interests and lowering to the dignity of the profession, and few will question that it is a personal disadvantage to those engaged in it.

The habit many physicians have of teaching their patients to prescribe for themselves, is an injury both to the profession and the public. In this way the general public has become familiar with most of the leading remedies, which they buy from the druggists and use to excess, to the druggists' profit, the physicians' loss, and the patients' injury. Most of the narcotic habitués are the result of this habit.

Another fad has arisen, in recent years, by which the interests of the profession are being undermined. Physi-

cians are being deluged with samples of palatable mixtures for distribution among their patients, which are intended to be, and are being dispensed by the druggists as family medicines. The profession is thus used as indorsing and advertising agents of a branch of medical trade that usurps the business interests of their own calling.

From a business point of view, the profession may be said to retail professional skill. How does it stand in comparison with other businesses in the matter of charging up and collecting accounts? The more successful retail business men are carrying on business as nearly as possible on a cash basis, and those who do a credit business render their accounts promptly and exact a settlement in a reasonable time. With the profession it is altogether different. Little or no attempt is made to reduce business to a cash system. In general, there is no regular rendering of bills or requirement of settlements; but the physician's patrons are encouraged to use his skill, and such medical and surgical supplies as he chooses to furnish, with a very indefinite understanding as to compensation in the dim and distant future. The average practitioner acquires the habit of assuming it to be a necessary part of his professional dignity not to show any anxiety for prompt and full compensation for his services.

It is a pitiable spectacle to see men who have grown gray in practice giving their services gratuitously, charging half of regular rates, letting their bills run indefinitely, in their efforts to resist the competition they have called into existence by their absurd boasting of the profits of their calling, and finally dying, with little or nothing left for the support of those dependent on them.

It is a noticeable fact that the trade in medicine, as carried on by the druggists and patent-medicine venders, is rapidly increasing at the expense of the business interests of the profession. This is chiefly owing to the better business methods employed. Medical charity is assumed entirely by the profession, while the trade is conducted on a strictly cash basis. Much attention has been given, in the past, to the protection of members from the competition of quacks, but they would receive very much more benefit could they be successfully protected from their own bad business habits.

These business disadvantages have a demoralizing effect on the individual members. Instead of that friendly good-will and affection that usually exists among educated men in other callings, the business habits of the general practitioner tend to produce the opposite effect. Young men enter the profession with a generous sense of gentlemanly feeling toward their professional brethren; but in time this is too frequently supplanted by selfish hostility. If a good business system were adopted the professional duties would be made much more congenial and the financial results would be greatly increased.

The cause of these disabilities lies with the members of the profession; and the remedy, so far as remediable, is in their own hands. A local remedy would be of no use; to be effective, it must be general. The power vested in the medical council to establish a code of ethics and insist on its observance on pain of expulsion from the profession, should be utilized for this purpose. By this means the general interests and social tone of the profession might be greatly enhanced.

CORRESPONDENCE.

FINAL EXAMINATIONS.

To the Editor of THE MEDICAL NEWS,

SIR: In calling lately on a medical student I found him busied over his books, reviewing and studying, in preparation for the final examinations. All the work of three years of hard study was to be tested by a few questions. The mental strain he was undergoing was severe enough to cause physical depression; and this added only the more to worry him, as he feared he would break down before the examinations were ended.

A final examination seems to me an antiquated educational method which cannot possibly give anyone an idea of the fitness or unfitness of a candidate; besides, it causes such an amount of physical anguish as to be positively cruel. The student who has been a good scholar all the year may not be able to answer readily or under excitement the ten or twenty questions asked at the final examination, while "the idiot" may be so coached and trained on "catch questions" as to pass a creditable examination.

The good students are compelled to stuff their craniums with statistical and theoretic data, which are forgotten directly after examination, yet which are required in order to *pass*.

In one college, at this year's examinations, the students were obliged to learn two conflicting theories, the one for one professor, the other for the other professor, each in contradiction to the other. If by chance they should get "mixed," and at examination give Prof. A. the theory of Prof. B., and *vice versa*, they would score two bad points.

Again, the last lectures, often the most interesting, must often be neglected in order to attend the "coaching quiz" and to *study up*. The primary object, "to acquire knowledge," becomes entirely subservient to that of "getting through." No matter how ambitious, how anxious to learn the student may be, the excitement around him and his own anxiety will force him also to strive "to pass," and oblige him to use all his efforts in that direction.

What is the remedy? *Abolish final examinations*. Let the test be the standing of the student during the year or term, obtained by a system of credits given at weekly quizzes or examinations. Let the reward be for original work, the best clinical diagnoses, the examinations on the cadaver, the reports of cases, etc. In other words, let the work that the student does at college be credited to him, and then, if his standing be good, let him have a diploma, and, if he deserves it, at the end of one year or not until ten years; real merit will then receive its due. At the German universities the student takes his examinations singly whenever he feels able and after he has attended a stated period, but in this, too, resides the evil of studying to pass.

"A diploma is often only a permission to become ignorant again," remarks the philosopher Guyon, "and this healthy ignorance is often the deeper in proportion as the individual has undergone more mental strain in mastering his knowledge by a fixed date, because of the exhaustion consequent upon it."

Medical colleges must see the evil of this if they but

look for it, and remedies can surely be found; and now, while the examinations are under way or just over, is the time to argue the question.

Very respectfully,

M. V. BALL.

PHILADELPHIA, PA., April 24, 1893.

CRANIECTOMY AND AGE.

To the Editor of THE MEDICAL NEWS,

SIR: The statement made by me, at the meeting of the Neurological Society, that "craniectomy has been done without regard to age, Keen having operated on a patient aged nineteen, Hammond on a patient aged twenty-one, and Weir on a patient aged eighteen" (THE MEDICAL NEWS, April 22, 1893, p. 444), was made from memory of cases recently looked up, and, as Dr. Keen has stated, was not exactly correct. Hammond[1] has reported a case of imbecility, epilepsy, and hemiplegia, operated on at the age of nineteen. The patient died, and the autopsy showed congenital porencephalus. Weir operated on a man, aged twenty-one, at the New York Hospital, February 1, 1892, who had been idiotic and epileptic from birth, and who was microcephalic. The case was not reported, but I was present at the operation. Bartlett[2] operated on a boy aged sixteen. I regret that my recollection of the age of Dr. Keen's cases was inaccurate.

Very truly,

M. ALLEN STARR.

22 WEST FORTY-EIGHTH STREET, NEW YORK.

FRACTURE OF THE FEMUR DURING DELIVERY.

To the Editor of THE MEDICAL NEWS,

SIR: In THE MEDICAL NEWS of March 25th, p. 323, Dr. L. W. Hubbard reports the "Treatment of a Case of Fracture of the Femur during Delivery." This accident is evidently of rare occurrence.

About twenty-three years ago I met with a case in my own practice, the only one which I have known to occur.

Called into the country a distance of four or five miles, I found a woman in an advanced stage of labor. The cord was prolapsed, and the right foot and left hand were presenting at vulva. The arm was, with but little difficulty, returned. By careful manipulation the head was elevated, and the right foot and leg rapidly descended. The cord was giving me some anxiety, so I encouraged the woman—a fine specimen of a healthy country dame—to use expulsive force during pains. With the extruded limb I employed moderate traction. The left leg still remained above the pelvic brim, while the right, with its *natis*, was bulging the distensible perineum. In this state of things, during a most powerful expulsive pain, a distinct "thud" was heard in the right iliac region. Another pain dislodged the limb, and the labor was soon completed.

The child was a fine female of nine pounds. The cause of the audible snap was soon discovered: the child's femur had been fractured at about the junction of the middle and upper thirds.

Though I had, at that time, been in active practice over thirty years, I had never known of such an accident; neither could I recall a special reference to it during my pupilage in the University of Pennsylvania, or by authors which had come into my hands. My position was anything but pleasant. Nonplussed as I was, I realized that something must be done immediately. I improvised and applied a temporary stay, or splint, of harness leather, previously taking a careful measurement of the whole limb and making a draft or model of the limb from the hip down. A skilful mechanic succeeded very well in carving out a splint from firm, light wood, snugly fitting and completely inclosing the outer half of the limb. This being padded, was adjusted to the limb the next day, and retained in position by a bandage and adhesive strips. No other appliance was used. In sixteen days complete union had taken place. The dressing was perfectly satisfactory in every particular—light, convenient, and in no wise cumbersome. The child, apparently, had no suffering, was thrifty, and at two years was as active as other children; the injured leg was as good as its fellow in length and shape.

J. P. GRUWELL, M.D.

ALLIANCE, O.

[1] New York Medical Journal, August, 1890.

[2] Hahnemannian Monthly, May, 1890.

NEWS ITEMS.

The American Association of Obstetricians and Gynecologists will hold its Sixth Annual Meeting at Detroit, Mich., on June 1, 2, and 3, 1893. The following is the preliminary program as far as titles are announced:

The President's Address, "The Present Position of Pelvic Surgery," by Dr. L. S. McMurtry, Louisville; "Abdominal Fixation," by Dr. Florian Krug, New York; "Endoscopic Tubes for Direct Examination of the Interior of the Uterus and Bladder," by Dr. Robert T. Morris, New York; "Placenta Previa," by Dr. William H. Wenning, Cincinnati; "What are the Indications for Abdominal Section in Intra-pelvic Hemorrhage?" by Dr. M. Rosenwasser, Cleveland; "Treatment of Metritis," by Dr. E. Pietranera, Cordova, A. R.; "A Plea for Better Surgery in the Closure of the Abdominal Incision," by Dr. H. W. Longyear, Detroit; "Remarks on the Treatment after Abdominal Section," by Dr. C. C. Frederick, Buffalo; "The Management of the Abdominal Incision," by Dr. Charles A. L. Reed, Cincinnati; "Dilatation of the Cervix for Dysmenorrhea," by Dr. E. S. Pond, Rutland; "Extra-uterine Pregnancy, with Report of Cases," by Dr. George S. Peck, Youngstown; "A Contribution to the Study of Ectopic Gestation," by Dr. E. Arnold Praeger, Nanaimo; "A Few Practical Notes on the Establishment of Anastomosis between the Gall-bladder and Intestine for Obstruction of the Common Duct, with the Relation of a Case of Obstruction of the Common Duct by a Small Growth," by Dr. James F. W. Ross, Toronto; "Vaginal Hysterectomy for Malignant Disease," by Dr. Rufus B. Hall, Cincinnati; "The Care of Pregnant Women," by Dr. John Milton Duff, Pittsburg; "A Contribution to the Pathology of Surgical Disease of the Gall-bladder," by Dr. Walter P. Manton, Detroit; "The Legal Questions in Gynecological Operations on the Insane," by Dr. Walter P. Manton, Detroit; "Pelvic Abscess," by Dr. I. S. Stone, Washington; "Central Rupture of the Perineum: Its Causation and Prevention," by Dr. John C. Sexton, Rushville; "A

Case of Myomectomy with Extra-peritoneal Treatment of the Pedicle, followed by Pregnancy and Complicated by Hemorrhages through the Abdominal Cicatrix," by Dr. X. O. Werder, Pittsburg; "Anatomy and Surgical Importance of the Peri-renal Cellulo-adipose Tissue," by Dr. L. H. Dunning, Indianapolis; "Report of Cases from Practice, with Remarks on the Same," by Dr. A. Vander Veer, Albany; "Further Observation on the Relation of Pelvic Disease and Psychical Disturbances in Women," by Dr. George H. Rohé, Catonsville.

The Associated Physicians and Surgeons is the name of a corporation that has been organized in New York for the purpose of performing the clerical, financial, and legal work necessary to the proper conduct and protection of the business affairs of medical practitioners exclusively. The work may be done either in the name of the subscriber or that of the Association, as may be desired.

An advisory board of physicians moulds the policy of the corporation to meet the needs and requirements of the profession, while that policy is executed in detail by business men especially fitted for the work to be done.

A subscriber may have placed at his disposal expert bookkeepers and stenographers, who call at his office sufficiently often to at all times keep his work in proper condition.

Accounts will be presented as requested, either by mail or by personal collector.

Prompt and intelligent service will be rendered on all doubtful accounts.

Claims against estates will be timely and properly presented and collected.

The corporation will have associate attorneys in every city to facilitate the collection of accounts in other States and foreign countries.

Special reports regarding the financial standing of patients will be rendered.

Loans will be negotiated.

Leading counsel that make a specialty of medical jurisprudence will be retained by the Association to furnish legal advice.

A Philadelphia office has been opened in the Mutual Life Building at Tenth and Chestnut Streets.

For Good Roads.—Congress has directed the Senate Committee on Agriculture and Forestry to investigate the condition of the agricultural interests of the country, and, if found depressed, to ascertain the causes and inquire into the proper remedy. This committee has appointed sub-committees to assist in the work, one of which has charge of the investigation of the condition of cotton-cultivation, another sub-committee will investigate matters relative to the production of wheat.

The condition of the roads throughout the country has a direct influence on the cost of production and upon the profit to the farmer of every article which he raises and sells, and, therefore, the most important subject for the committee to investigate is the relation of roads to the agricultural interests of the country.

A petition has been submitted to the Senate asking for the appointment of a sub-committee to make this investigation.

The Senate Agricultural Committee of the Fifty-third Congress is composed of the following members: Hon. James Z. George, Chairman, Carrollton, Miss.; Hon. William B. Bate, Nashville, Tenn.; Hon. Matt. W. Ransom, Weldon, N. C.; Hon. Wm. Alfred Peffer, Topeka, Kan.; Hon. William N Roach, North Dakota; Hon. James McMillan, Detroit, Mich.; Hon. William D. Washburn, Minneapolis, Minn.; Hon. Redfield Proctor, Proctor, Vt.; and Hon. Henry C. Hansborough, Devil's Lake, North Dakota, to whom those interested in the subject may write.

The Third Annual Conference of State Medical Examining and Licensing Boards will be held in Milwaukee, Wis., June 7, 1893. The following subjects will be discussed:

1. The Evolution of State Medical Examining and Licensing Boards. Their present and prospective influence in elevating the moral and intellectual tone of the profession.

2. Composition of Boards. *a*. The desirable number of members. *b*. The desirable appointing power. *c*. The advantages and disadvantages of separate boards representing the different schools of practice.

3. Provisions of the various State Laws. *a*. Should the possession of a diploma from a recognized medical school be a prerequisite to appearing before a board for examination? *b*. What reciprocal relations should exist between boards? *c*. Should teachers in medical schools be eligible to membership on State examining boards? *d*. Defects in existing laws; the best law in vogue; the ideal law.

4. Methods of Conducting Examinations. *a*. How should the examination be prepared? *b*. The scope of examinations. *c*. The minimum and maximum requirements.

Dr. John H. Rauch is the President; Dr. W. W. Potter the Vice-President; Hugh M. Taylor, Secretary and Treasurer.

The French Congress of Surgery will be held in the middle of October, 1894. Prof. Tillaux has been elected President and M. Alphonse Guérin, Vice-President. The questions proposed for discussion are: 1. The Etiology and Pathogénesis of Carcinoma; 2. The Surgery of the Spine.

Lady Lister, the wife of Sir Joseph Lister, has just died of acute pneumonia while travelling in Italy. She was the daughter of the late distinguished surgeon of Edinburgh, Mr. Syme.

Surgeon-General of the United States Navy.—The Secretary of the Navy has appointed Medical Inspector J. Rufus Tryon to be Surgeon-General of the Navy, to succeed John Mills Brown, retired.

The Colorado State Medical Society will hold its Twenty-third Annual Meeting at Denver, June 20, 21, and 22, 1893. An interesting program is in process of completion.

The First International Samaritan Congress will be held at Vienna, from September 8 to 10, 1893, under the presidency of Professor Billroth.

Wernicke, of Breslau, has been called to Vienna, to assume charge of the Second Psychiatric Clinic.

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ORIGINAL ARTICLES.

VILLAGE AND EMERGENCY HOSPITALS.

BY GEO. G. GROFF, M.D.,
OF LEWISBURG, PA.

IN the United States, rural hospitals are comparatively unknown, while in English country life they are taking quite a prominent place. In 1870 there were not less than sixty "Cottage Hospitals" scattered through the British Isles. Of their need in this country, Dr. George Derby, in his report to the Massachusetts State Board of Health in 1874, says: "There are many reasons for believing that, at the present time, small and well-arranged hospitals in at least twenty of our busy towns would be the means of saving life and of preventing useless suffering to both the sick and the well." It is believed that a small hospital would be a blessing in every community of a population of 2500 or more. "It would furnish a means for the treatment of various classes of patients; for instance, those who cannot be properly cared for in their homes, a very large and growing part of the population, and cases of accidents requiring immediate treatment, or operation, and subsequent skilled attendance and nursing." They would also be of value in cases of outbreaks of epidemics of contagious diseases, as smallpox, diphtheria, scarlet fever, etc., and would offer an easy means of early stamping out these diseases. "The country practitioner, with such means at hand, and aided by trained nurses, when needed, would have the advantages now enjoyed only by metropolitan physicians, and would be enabled to keep his patient under his eye, within easy distance of his own house. The patient too, would have the familiar faces of friends and neighbors about him, and could breathe his own pure country air," the last a matter of no small importance.

"It is not intended that these village or cottage hospitals should imitate in any way the form or detail of a general hospital, with its wards, nurse rooms, etc. A plain country house, of moderate size, possessing the advantages of a healthy situation, with a southern exposure, plenty of sunlight, good drainage, and a reasonable amount of ventilation, will answer all the purposes of a village hospital." And as a form of beneficence as yet practically unknown among us, it is suggested to those looking about for means whereby to benefit their fellow-men, that the gift of such a building as is here described for a hospital would be a great blessing to every rural community. One or two beds per 1000 of population are all that would be generally required, five or six beds being ample for small country towns.

The objects of a good hospital, according to Dr. Edward Hutchinson, are "To care for the sick better than they can be provided for in their own homes; to cure sick people at the least expense; to have a convenient administration, so that a few physicians and nurses can do the work; to give those suffering from surgical operations the best chances for recovery with life and limb; to care for the poor who cannot afford the things necessary for their own comfort; that childbed cases may be secluded and not exposed to dangerous influences by contagion, whether by physician, nurse, or location; to have provisions for the contagious diseases of childhood, as well as for those of adult life, so that the mortality may not be increased by the aggregation of the sick."

THE LOCATION OF THE HOSPITAL.

Places for the treatment of the sick should always have a healthful location. For a village hospital, a warm, dry hillside, facing the south, will be the best. Dr. Francis E. Brown says: "The site should be elevated; on a good, porous, gravelly or sandy soil; not on new-made land, nor on a clayey or retentive soil; where abundant means are offered for effective drainage; never in a crowded locality, but in a situation which is open to healthful winds, and has a fine exposure to sunlight. The building should be so situated that the prevalent winds may not pass over marshes or regions infected by dampness or malarial influences, or in the neighborhood of large sewers. Particular attention should be given to the slope of the land in the neighborhood. A valley or depression should be avoided, as well as a situation under a steep hill, or on a slope which would collect water or dampness, or where the air would have a tendency to become stagnant. No site should be chosen, however accessible, which will not give at all times, the utmost purity of atmosphere." Hennen says on the location of hospitals: "That building makes the best hospital which is situated high, dry, and detached; in which there are sufficient doors and windows admitting of cross-ventilation; with open fireplaces and secure roofs

and walls; with rooms of easy access, lofty, and of moderate size."

MATERIALS OF CONSTRUCTION.

Stone, brick and wood have all been used in the construction of hospital walls. In the past, vast sums have been expended in erecting imposing architectural piles.[1] The views of the foremost sanitarians of the present time favor the erection of temporary structures for hospital purposes. Dr. Woodworth says: "The old magnificent hospitals, built as monuments for all time, will be abandoned for the simple structure of indefinite existence, and the only strictly permanent parts of the modern hospital will be the executive building, the kitchen, laundry, and engine-house." Dr. J. S. Billings says: "I believe that no hospital should be constructed with a view to its being in use more than fifteen years. If the money required to put up such structures as the New York civil hospitals, the Rhode Island hospital, or the Cincinnati hospital, were divided into two equal parts, one half being used to erect frame hospitals of the same capacity as the old brick hospitals actually built, the other half being put at interest at six per cent., a complete new hospital could be furnished every twelve years for an indefinite period."

The reason for preferring these temporary structures is that it has been found that old hospital buildings become so saturated with the germs of disease and with the exhalations from the bodies of the patients, that finally they infect the patients. Galton in his work on hospital construction has written: "Do not build for a long futurity. Buildings used for the reception of the sick become permeated with organic impurities, and it is a real sanitary advantage that they should be pulled down and entirely rebuilt on a fresh site periodically."

It would seem, then, that buildings of frame would be most desirable for village hospitals. They should be substantially built, with wards to contain not more than from 12 to 20 patients. The smaller the wards, the more nurses will be required.

In Europe, "pavilion" hospitals, constructed of wood, with walls of heavy canvas, have been extensively used. These structures are as substantial as frame buildings, and at the same time offer all the advantages of tents. In cold weather, the walls are readily made of double thickness of muslin.

SUMMER AND EMERGENCY HOSPITALS.

In the summer months, and in cases of emergencies, Dr. J. S. Billings recommends the United States hospital tents, which will accommodate 25 patients. It would be well for Boards of Health and all places without hospital accommodations to have on hand a number of these or smaller tents, for use on demand for cases of smallpox, typhus fever, and similar contagious diseases. They might be used for these cases even when a more permanent hospital was possessed by a community. Cowles in his "Treatment of the Sick in Tents," remarks: "It must readily be seen how simple and easy a thing it is to provide good hospital accommodations in any emergency—no matter how sudden and unexpected—that the prevalence of epidemic and infectious diseases may occasion." Of tent hospitals Dr. F. H. Brown writes: "The more nearly patients are brought to the condition of being treated in the open air, the more quickly and surely will they recover. The wooden barrack and the hut are good, but in many cases the tent is better. As adjuncts, at least, to the hospital, we should look to the tents in our hospital yards in the warmer season as the most suitable places in which to treat the gravest wounds and many of the severer forms of disease." Such tent hospitals have been used for years, with success, at Berlin, Vienna, Leipzig, Dresden, Frankfort, and other European cities.

THE CONSTRUCTION OF HOSPITALS.

Dr. Hutchinson tersely enumerates the points to be borne in mind in the construction of hospitals.

Arrange the wards so that no sick person will endanger another.

Have a plentiful supply of pure air, with provision for the escape of the foul air.

Supply at least 1200 cubic feet of air for each bed.

Separate the sexes, and also medical, surgical, and childbed cases.

Make provision for isolating contagious diseases.

Have a bountiful supply of pure water.

Have all the drains go entirely outside of the buildings.

The wards should be so arranged that they may have the greatest possible exposure to the sun.

Separate the convalescents from those confined to bed—during the day, at least.

Have the wards on one floor, and but one story high.

Delirium tremens, accident, and insane patients, should have apartments at such a distance from the wards that they may not disturb the rest of the sick.

There should be small wards to isolate troublesome patients, and for those who are easily disturbed.

The kitchen and laundry should be separate from the wards, so that the odors of washing and cooking cannot reach the sick.

[1] The Marine Hospital at San Francisco cost $238,871; that at Boston $394,047; that at Chicago $422,107; and that at New Orleans over $600,000. These were built on the old plan. The new Marine Hospital at San Francisco cost but $58,789.

Water-closets and slop-sinks should be away from the wards, and have separate ventilation.

The nurse's room should overlook the ward.

There should always be a high and airy situation; a cheerful view; indoor promenade; extensive grounds for exercise; flower gardens and lawn.

Have no cellars under the wards.

Have hard, unabsorbing surfaces for walls and ceilings.

Let the floors be oiled or painted, so that they will not absorb water.

The wards should be so far distant from each other that the air may circulate freely.

The corridors connecting the wards should be open beneath, and provided with glass windows, to slide open, to allow the air to blow under and through them.

Have open fireplaces in the wards, to assist ventilation and to supplement the heating apparatus.

Have two steam-boilers, for fear of accident.

The administration building ought to be distinct from, yet attached to, the wards.

The heating, washing, drying, and cooking should be done by steam.

Have such an arrangement of the wards that any one of them can be disinfected, or even torn down, without disturbing the general administration.

The windows should be numerous and large, extending from near the ceiling to within two feet of the floor.

The earth-closet is recommended for rural hospitals.

Heating and Ventilation.—When tents and temporary sheds are used as emergency hospitals, and artificial heat is needed, dependence must be placed upon stoves. Wood fires will be found to be preferable to those of coal, as throwing off less of unpleasant and unhealthful gases. In "cottage hospitals" every ward should have its own "open" fireplace. In these, on cool days, in spring and autumn, cheerful fires of wood may be built to remove all feeling of chilliness from the room. The glowing fire of wood will prove a curative in many cases, while the open fireplace will at all times be an excellent means of ventilation. For the winter season hot-air furnaces placed in the cellar are recommended, as by this means one fire will warm the whole building, and besides the warmed air entering the room will displace an equal volume of fouled air, and thus act as a means of ventilation. In the case of the erection of a new hospital, we would advise that some of the patented systems of ventilation now in general use in public buildings, as the "Davis," "Smead and Wills" systems, be carefully examined.

In any permanent rural hospital the building should be heated the whole winter, whether there be patients in it or not. Otherwise, the building would become cold, and damp, and unfit for use in any emergency which might arise. Probably this would best be secured by having a competent man and woman reside in the hospital—the man to act as steward and the woman as matron, and both as nurses in emergencies. As has already been said, the more thoroughly the patient is in the open air the better will be his chances of recovery. Hence the value of tent hospitals. If the death-rate has been enormous in the absence of any attempt at ventilation, these rates have been reduced one-third, and even more than one-half, when efficient means of ventilation have been introduced.

Foul air can kill as well as disease, and it can kill a sick man more easily than one who is well. Dr. Wylie, in his work on hospital construction, says that each patient requires about 124 square feet of floor-surface, with 1800 cubic feet of air-space, and this air should be changed every hour, but in contagious diseases two or three times an hour. In village hospitals the open fireplace is urged as the first means of ventilation. This must be kept open summer and winter, and in cases of contagious diseases a fire should be kept burning in it. Next, window-sashes should move freely, and may be left open an inch at both top and bottom. Third, except in extreme cases, each ward should be opened a portion of each day for a complete airing, and lastly, a patented system of heating and ventilation may be introduced. It should be remembered that while there is ventilation going on in connection with heating in open fireplaces, stoves, and hot-air furnaces, there is no ventilation whatever in connection with the steam and hot-water heating as ordinarily arranged. *Rooms heated with steam or hot-water pipes must be ventilated.* If openings are made in the ceiling, much foul air will pass off in this way, but in such a case the space under the roof must be freely open to the external air, else the circulation, and hence the removal of foul air, will be small. If air-shafts are used in ventilators, there will then be no upward movement of air in them. There should be openings at both top and bottom of a room into these shafts. As generally built, ventilating shafts are valueless. *In all efforts at ventilation we must remember that cold draughts must be avoided.* While foul air kills, draughts of cold air may kill as with a two-edged sword.

ADMINISTRATION.

Under a Board of Trustees, if an endowed institution, or a Sanitary Committee, if supported by the town, there should be a *physician in charge.* He should, under the Trustees, have personal control of the hospital. He should order all supplies, have control of the nurses, should keep a record of the

admission and discharge of all patients, with a history of their treatment. He should make a weekly or monthly report to the authorities appointing him. This plan should be followed in emergency hospitals for contagious diseases.

In permanent cottage hospitals another plan of administration has been supported. Full control of the hospital rests in a Board of Trustees or in the Sanitary Committee. All physicians in the district are free to bring their patients to the hospital for treatment, and to treat them there. A man and his wife, discreet persons, are selected to act as steward and matron, and also as nurses. These persons should reside in the hospital, and have it ready at all times for the reception of patients. Under the Trustees they should have full charge of all the property in the hospital. The steward should be required to keep the hospital premises scrupulously clean at all times. He should see that additional nurses that may be employed properly perform all of their duties. He should supervise the disinfection of clothing, bedding, etc. He should see that before leaving the hospital every patient receives a change of non-infected clothing, and takes a full bath in warm water. He should, under orders of the Board of Trustees, control the admission of visitors to the hospital. He should treat all patients with civility and kindness, and see that all the other nurses are kind and patient. No cruelty, insolence, or neglect should be tolerated. He should not permit intoxicating liquors or foods to be given to patients, except as directed by the physician in charge of each case. He should see that nurses carry out the orders of the physicians. He should report to the Board all the needs of the hospital from time to time.

The matron should see that each patient has the diet prescribed, properly prepared, and at the stated hours. She should have charge of the bedding, and such wearing apparel as may be provided for the patients. She should have general supervision of the laundry, and should see that cleanliness is maintained throughout the hospital. She should have charge of the table for the steward and nurses, and other employés of the hospital, and with the steward should have control of the nurses and servants.

Charges.—Each patient shall be charged for board and attendance, at such rates as may be determined by the Board of Trustees.

The Etiology of Fibrinous Rhinitis.—At a recent meeting of the Medical Society of Greifswald, Abel (*Deutsche medicin. Wochenschr.*, Jahrg. xix, No. 15, p. 359) reported a case of fibrinous rhinitis in which careful microscopic and cultural examination failed to disclose in the membrane the presence of diphtheria-bacilli. On the other hand, pneumonia-cocci of diminished virulence were found in large numbers, disappearing toward the close of the disease.

THE GERMICIDAL PROPERTIES OF NUCLEINS.

A Preliminary Contribution from the Laboratory of Hygiene of Michigan University.

By VICTOR C. VAUGHAN, M.D., FREDK. G. NOVY, M.D., AND CHARLES T. McCLINTOCK, OF ANN ARBOR, MICH.

In studying the subject of immunity we have been led to test the action of certain constituents of the cell upon the life and growth of microörganisms, because it has seemed to us that the cells of the animal body must be concerned in the production of immunity, and in a way not explained by the phagocytic theory of Metschnikoff.

Immunity may be natural or acquired. Natural immunity may be peculiar to the race or to the individual. An example of racial immunity is that of the domestic fowl to anthrax. The chick, even at the moment when it comes from the egg, is immune to the most virulent cultures of the bacillus anthracis. It is true that this animal may be made susceptible to this disease, but this is an artificially induced susceptibility, and the immunity is natural to every period of life. Another example of racial immunity is that of the frog to the same disease, and here again an artificial susceptibility may be induced. Racial immunity must be inherent in the parent cell.

The natural immunity which is peculiar to the individual usually comes with adult life. The young are susceptible to a given disease, but adults of the same species lose this susceptibility, and become immune. Examples of this are common. The young rat is susceptible to anthrax, while the adult is naturally immune, but can be rendered susceptible by reducing the vital strength. The child is highly susceptible to scarlet-fever and diphtheria, while the adult, though not wholly immune to these diseases, loses much in susceptibility, and is likely to become infected only when much reduced in vitality, or when exposed to the prolonged influence of the infecting agent. The only reasonable explanation of this immunity is that it is inherent in the parent cell, and comes as naturally as the changes in form and voice at puberty, or as the growth of the beard in early manhood. The evolution of the condition of immunity in these cases is due to natural development of the functions of certain cells of the body.

In selecting the constituent of the cell upon which we could begin our studies, the nucleins, constituting as they do the most complex part and possessing marked physiologic properties, naturally suggested themselves. We will not in this paper discuss the chemistry of the nucleins any farther than to say that they consist of nucleic acids combined with a complex proteid base. It is more than probable that nucleins from diverse sources differ in

both their acids and bases. The nucleins are not digested by hydrochloric acid and pepsin, and this affords in many cases a means for their isolation.

Nuclein from dog's testes. The testicles of two small dogs were stripped of their investing membranes, and were digested for some days (until the supernatant fluid failed to respond to the biuret test for peptones) at 40° C., with pepsin and 0.2 per cent. hydrochloric acid. The undigested portion was collected on filter-paper, and washed first with dilute hydrochloric acid, then with alcohol. Finally, it was dissolved in a 0.5 per cent. solution of potassium hydrate, and filtered through a Chamberland filter without pressure.

This solution is clear, golden-yellow, and feebly alkaline. On the addition of a drop of nitric acid a white precipitate forms, and dissolves colorless in the cold on the further addition of the acid. The nuclein solution does not give the biuret reaction, but does respond to the Millon test.

With this solution the following experiments have been made in order to test its germicidal effect.

The solution of testicular nuclein was diluted with seven volumes of physiologic salt-solution. This reduced the alkali to 0.0625 per cent., an amount too small to have itself any germicidal effect.

One tube of this solution was inoculated with a loop of a beef-tea culture of the staphylococcus pyogenes aureus, and plates were made after 5 min., 4 hrs., 6 hrs., 23 hrs., and 54 hrs. The number of colonies on each plate was as follows:

Time	5 min.	4 hrs.	6 hrs.	23 hrs.	54 hrs.
No. of colonies	10	0	0	0	0

Another tube was inoculated with a loop of a beef-tea culture of bacillus venenosus, and plates were made, with the following results:

Time	5 min.	4 hrs.	6 hrs.
No. of colonies	210	8	9

Another portion of the testicular nuclein solution was diluted with four parts of the physiologic salt-solution. This reduced the alkalinity to 0.10 per cent. (water containing 0.5 per cent. of potassium hydrate failed to destroy this culture of the aureus after twenty-four hours' exposure). To a tube of this a loop of a beef-tea culture of the aureus was added. The plates showed the following:

Time	5 min.	1 hr.	2 hrs.	14 hrs.	23 hrs.
No. of colonies	250	0	0	0	0

In another, in which the same dilution and the same germ were used, the number of colonies was as follows:

Time . Immediately.	20 min.	1 hr.	2 hrs.	17 hrs	24 hrs.
No. of colonies 680	0	0	0	0	0

In still another experiment, in which the same dilution of the testicular nuclein was used with the anthrax-bacillus (without spores), the colonies numbered as follows:

Time . Immediately.	20 min.	1 hr.	2 hrs.	17 hrs.	24 hrs.
No. of colonies 45	0	0	0	0	0

With nuclein obtained from the testes of a rat and diluted with physiologic salt-solution until the amount of alkali was reduced to 0.06 per cent., one experiment with aureus gave the following results:

Time . . Immediately.	5 min.	1 hr.	2 hrs.	27 hrs.
No. of colonies 1110	0	0	0	0

Nuclein from thyroid gland. We took the thyroid gland of a rabbit, killed by drawing the blood from the carotid, cut the gland into fine pieces, extracted with alcohol and ether, then placed the extract in 0.2 per cent. hydrochloric acid with pepsin, and kept it in the incubator at 40 C. for two days, having decanted and renewed the digestive fluid several times. The slight glanular residue which remained undigested was collected upon a filter, and washed with 0.2 per cent. hydrochloric acid until the washings failed to give the biuret reaction. After this treatment there appeared on the filter glistening scales which, under the microscope, showed bundles of radiating needles. These proved to be fat, and were dissolved by washing with alcohol and ether. The residue now on the paper was exceedingly small. This was dissolved in 5 c.c. of a 0.25 per cent. potassium hydrate solution, diluted with an equal volume of physiologic salt-solution, and with this the experiments were made.

This solution gave a faint opalescence on the addition of nitric acid. It did not color on heating with nitric acid, but did become markedly yellow on the further addition of ammonia. It failed to respond to the biuret test.

This solution was inoculated with a loop of a beef-tea culture of the aureus, and the plates showed the following number of colonies:

Time . . . Immediately.	10 min.	1 hr.	18 hrs.
No. of colonies 805	830	256	0

Nuclein from yeast-cells. Yeast-cells, after having been washed with water by decantation, were extracted with dilute alkali. The alkaline solution was precipitated with dilute acid, and this process repeated a number of times. The solution, as kept for use, was made by dissolving the nuclein in 0.25 per cent. alkali. That the nuclein in this solution is not free from albuminous bodies is shown by the fact that it responds promptly to the biuret, xanthoproteic, and Millon tests. However, this solution has stood in an ordinary glass-stoppered bottle, which is frequently opened for nearly five months, and remains germ-free.

The amount of nuclein (impure) in this solution is nine milligrams per cubic centimeter. With this solution the following experiments were made:

Two parts of the yeast nuclein solution were diluted with three parts of the physiologic salt-solution, and this was inoculated with a loop of a beef-tea solution of the aureus. Plates made showed the following results:

Time	5 min.	1 hr.	2 hrs.	14 hrs.	23 hrs.
No. of colonies	1110	0	0	0	0

The same experiment repeated gave the following:

Time	5 min.	1 hr.	2 hrs.	14 hrs.	23 hrs.
No. of colonies	1490	20	0	0	0

In one, with the staphylococcus pyogenes albus, the following are the figures:

Time . . Immediately.	20 min.	1 hr.	2 hrs.	17 hrs.	24 hrs.
No. of colonies 680	0	0	0	0	0

In one, with the bacillus anthracis:

Time . Immediately.	20 min.	1 hr.	2 hrs.	17 hrs.	24 hrs.
No. of colonies 45	0	0	0	0	0

During the past year we have also tested the effects of injections of nuclein upon the progress of certain infectious diseases. Moreover, we have some evidence that the germicidal constituent of blood-serum belongs to the nucleins. This work, however, we wish to confirm before publishing.

PERIODIC INSANITY, IN WHICH THE EXCITING CAUSE APPEARS TO BE THE MENSTRUAL FUNCTION—REPORT OF A TYPICAL CASE.

BY B. D. EVANS, M.D.,
MEDICAL DIRECTOR, NEW JERSEY STATE HOSPITAL, MORRIS PLAINS; MEMBER OF MEDICO-LEGAL SOCIETY, NEW YORK; FELLOW MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND, ETC.

THE subject of periodic insanity, as related to the menstrual function, is one about which the conservative physician and alienist naturally pauses before placing himself upon record. In this age, when gynecology has apparently gone wild, and the gynecologist is prone to trace every disease, about the etiology and pathology of which there is the slightest doubt, to the uterus, the ovaries, and the tubes, we, who owe so much to the womb, the resting-place of our early existence, are pained to divert the attention of our earnest scientific brethren from the old homestead and the adjacent premises; we would emphasize our belief in the existence of special organisms and specific agencies as factors in the causation of diseases that they have always traced to some functional derangement or lesion of the generative organs and for which their *sine qua non* is the removal of the ovaries. On the other hand, we hesitate to lend our indorsement to what may seem to invite these specialists to extend their domain or give broader scope to their scalpel and hemostatic forceps.

While I think it injudicious, to say the least, to indorse abdominal section in insane patients, upon the pretext of giving them rest, skilful nursing, and more nutritious diet, or for the removal of ovaries with a slight adhesion, a congested tube, a small cyst, etc., yet I do hold that there are cases, in which a careful examination reveals no pathologic lesion whatever as existing in any of the internal generative organs, that nevertheless justify the removal of the ovaries, because the presence of these organs means the continuance of a function that acts as an exciting cause in the production of symptoms and conditions disastrous to the patient. I have selected one case that I consider a typical one; space in a paper of this kind forbids my relating more, though I have the records of large numbers at my command. Taking the following case as a representative one, from it we will draw our conclusions:

Miss S. L., aged thirty-five, white, has been insane about twelve years. She was admitted to the New Jersey State Hospital, November, 1890, suffering from periodic mania. From the time of the first appearance of the menses, she had always evinced great nervousness during her periods. In her eighteenth year she manifested regularly during her catamenial flow, a condition of excitement and exaltation which, later on in life, became more marked, and in her twenty-third year she developed various illusions, hallucinations of sight and hearing, and delusions, all of which were manifested during her menstrual periods, and disappeared in a day or two after the disappearance of the menstrual flow, leaving her nervous, timid, and easily disturbed; this condition usually subsided a day or two later, and the patient was then apparently in full possession of her normal mental health, which continued until the reappearance of her menses, which brought about the recurrence of the symptoms and conditions named.

During the intervals of apparent normal health she is bright, cheerful, and entertaining, and being a lady of cultivated habits, adds much to the comfort and pleasure of her associates. Her recollection of her actions and deportment during her periods of excitement remains clear and precise; and there is always a disposition to repair any damage done while in her excited condition, saying that she had not self-control, or she would not have done so, etc. On one occasion, she battered and scarred a door leading from the ward she occupied, and after the abatement of her "spell," as she called it, she seemed much ashamed that she had done so rude a thing, and asked permission to cover the scars with her paint-brush, which she did in an artistic manner, by painting over them a beautiful landscape.

A careful examination exhibited a normal, healthy condition of the generative organs, not even tenderness on pressure over the ovarian region. This is a case such as every alienist and asylum physician has to deal with.

Dr. H. Sutherland, in the *Dictionary of Psychological Medicine*, states that of 162 cases of mania in females, no less than 99 had attacks of excitement that could be distinctly referred to the catamenial period; of the 99, in 11 the maniacal excitement occurred at periods varying from one day to one week before the accession of the catamenia; in the remaining 88, the mania appeared to occur and to be at its worst during the catamenial discharge.

Esquirol and Morel agree that menstruation constitutes the cause in one-sixth of the cases of insanity in females.

Icard says the menstrual function can, by sympathy, create a condition varying from simple troubling of the soul to actual insanity.

Dr. I. Ray, in a paper entitled "Doubtful Recoveries," written about twenty-five years ago, said: "In females, the menstrual period may be accompanied by abnormal excitement after convalescence has seemed to be fairly established." It is a safe rule, therefore, never to discharge a female patient until the menstrual function is performed without being accompanied by mental disturbance.

It has been claimed that the menstrual condition is simply associated with the periodic attacks, and is only an exciting factor at most, the real cause being an hereditary neurotic vice. Admit that it is simply the exciting cause, and that the patient has a bad heredity, is it not the duty of the physician to remove the exciting factor?

While first assistant physician at the Maryland Hospital for the Insane, I had under my care a robust and muscular woman who was subject to maniacal outbursts, accompanied by hallucinations and delusions, at the accession of each menstrual period. She was at these times noisy, destructive, and quarrelsome; she had been an inmate of the institution for about eight years, and it was generally known that my predecessors had exhausted the materia medica upon her. I followed in their footsteps, and gave her every drug reputed to benefit such cases—emetics, nauseants, cathartics, hypnotics, depressants, and tonics—and all without avail. Acting under the instructions and direction of Dr. G. H. Rohé, I performed an abdominal section and removed the ovaries. Complete recovery followed the operation, and the young woman, who had been looked upon as a "hopeless case," was discharged as recovered May 12, 1892, since which time she has remained well and earned her living. I wish to emphasize the fact that no lesion was found in the ovaries or tubes that would have warranted the operation, had not the menstrual function been, in our judgment, the exciting cause of the outbreaks; the results that followed the operation have fully justified its performance.

The menstrual function during perfect health is usually not attended by serious disturbance of the nervous or circulatory system. It lets off what, during pregnancy, would go to the nutrition and building up of the fetus, and that which, during lactation, is an addition to the nutrition and energy needed by the mother. In other words, it is a reserve force in nutrition and energy. Pozzi says: "It is the safety-valve;" but when we consider it in connection with a delicately poised nervous system that requires all its sources of supplies to be intact in order to preserve its equilibrium, it frequently means a loss of blood that is needed, a strain upon the nervous system it is unable to bear, a loss of energy it can ill afford to spare, a loss of poise, a deviation from a normal exhibition of nerve-force and healthy mental manifestations, and hence there is an outburst, as in the case related. Whatever theory may be accepted as to menstruation, whether it be that of ovulation, simple congestion, and the shedding of the endometrium, or that of nervous origin, it is certain that in delicately poised nervous systems the nervous phenomena attendant on this function are very marked and positive, varying in characteristics and intensity with the individual.

Whether the manifestation of mental perversion be due to the loss of blood brought about by the catamenial flow, the disturbances of the circulation, or the nervous strain incident to the performance of the menstrual function, the fact that between the periods there is a normal adjustment of the mental equilibrium, leads us naturally to the assumption that a permanent cessation of that function would tend to prevent the periodic outbreaks of insanity, and promote the recovery of the patient.

Hereditary predisposition, I hold, should not deter the physician from operating; while a case in which the heredity is good offers a more encouraging outlook, yet if a condition exists in which the highly susceptible nervous system of the patient is at regular intervals upset, and delusions with other symptoms of insanity are exhibited as a consequence of the performance of this function, which under other conditions would be a token of health, it seems to me that the physician's duty points clearly to the artificial establishment of the menopause. The delusions which in the earlier stages of this form of periodic insanity fade away at each period as the flow ceases, in the more advanced stages linger longer and show signs of more fixedness, until finally they become permanent fixtures in the mental organization, and there results an impairment of the intellect beyond the aid of either medicine or surgery; for this reason the earlier the operation is performed the better.

By reviewing the subject-matter of this paper, the following deductions have been drawn:

1. That in many cases of periodic insanity the exciting cause may be directly traced to the menstrual function.

2. That when the attacks of insanity are coincident with the catamenial flow, and an apparently normal mental condition prevails between the menstrual periods, it is fair to presume that the menstrual function is the cause of the attack.

3. That in such cases, the removal of the ovaries is justifiable, though there be no pathologic lesion discernible; the opinion is even more forcibly indicated than in cases in which a decided pathologic condition of the ovaries exists, but in which the connection between the lesion of the ovaries and the mental perversion is doubtful.

CLINICAL MEMORANDA.

A CASE OF MALIGNANT SYPHILIS RESULTING IN DEATH.[1]

BY A. E. ROUSSEL, M.D.,
OF PHILADELPHIA,
LECTURER ON PHYSICAL DIAGNOSIS AND CLINICAL MEDICINE, MEDICO-CHIRURGICAL COLLEGE; PHYSICIAN TO THE HOWARD AND TO THE SOUTHWESTERN HOSPITALS; CONSULTING PHYSICIAN TO THE TEMPORARY HOME FOR YOUNG MEN, ETC.

J. P. was born in France, and is forty years of age. He is of good family history and enjoyed excellent health (never having been sick since childhood) until the appearance of a chancre twenty-two days after exposure. The ulcer soon took upon itself a phagedenic character, and was shortly afterward followed by induration of the inguinal glands.

Nine days after first noticing the initial lesion the patient was suddenly confined to his bed with all the symptoms of an acute attack of rheumatic fever, and was, indeed, for a period of four weeks, so treated by his physician. At the expiration of this time, the disease being apparently no better, the physician was dismissed and I was called in attendance.

After a careful examination I discovered a suspicious eruption on the body (roseola), and obtaining the foregoing history I verified the presence of the chancre, which had not yet thoroughly cicatrized and bore evidence of its destructive ravages.

The pains complained of were not solely localized to the joints, which were, however, hot and slightly swollen, but were also particularly severe in the long bones of the leg and characterized by nocturnal exacerbations.

Examination of the internal anterior surface of the right tibia in its upper third revealed the presence of a small tumor, intimately connected with the bone. It measured 5½ centimeters in its transverse diameter by 4½ centimeters in length, and projected to the extent of about 1 centimeter at its most salient part, but the edges were insensibly lost in the surrounding tissue. To the touch it was almost as hard as the bone itself, and was surrounded neither by edema nor peripheral inflammation, and the skin covering the part was both healthy and movable. The patient claimed to have noticed its presence for about ten days; he was certain that it was at no time attended by external evidences of inflammation, but thought that its growth was most rapid at the onset. The localized pain, which dated from the beginning, was extremely lancinating but paroxysmal in character and greatly increased by the slightest movement.

The fever at this time was rather quotidian in character, the morning temperature averaging 99.5°, and rising in the evening to about 103°, unaccompanied by chill, but by an intense cephalalgia which continued for period of three or four hours each evening, after which a profuse perspiration took place.

Under the mixed treatment the case rapidly improved and the patient was able to resume his occupation in two weeks' time. The growth upon the tibia slowly diminished in volume and had practically disappeared in about one month, with the exception, however, of slight permanent thickening at the crest of the tibia, which remained the seat of occasional intermittent pain.

Three weeks later (about ten weeks after the appearance of the chancre), during office-treatment, my attention was called to a sensation of pain referred to the roof of the mouth during the act of eating. An examination of the part showed a considerable amount of brawny swelling, together with a deep, irregular, yellowish ulcer near the median line, about 2½ centimeters in size, and surrounded by a line of inflammatory redness. In a few days the ulceration in question was noticed to have spread considerably and had apparently invaded the deeper structures.

Notwithstanding all local treatment directed to the part, in conjunction with internal medication, the destruction of tissue continued until the bone itself became affected. At about this time the patient was seen by Dr. William G. Porter in consultation, but in spite of our united efforts necrosis of the hard palate, as well as of the alveolar processes of the superior maxillary bone and of the nasal bones, occurred in turn, and the ulceration only assumed a latent condition during the last half of the duration of the malady, when a perforation the size of 6 or 7 centimeters had taken place. This was attended by the loss of several teeth and imparted to the voice the nasal sound characteristic of this condition.

Shortly after the beginning of the necrosis the patient commenced to lose rapidly in weight and strength, and a marked cachexia became an important feature.

A pustular eruption upon the face and scalp was now noticed. The bone-pains returned and the debility was so great that the patient was confined to the house. Curious to state, the appetite was greatly increased; indeed, the condition of syphilitic boulimia, so well described by Fournier, soon became manifest, as on several occasions during the absence of the wife, the patient invaded the pantry and partook, according to his own estimate, of enough food to satisfy three or four men. It may be mentioned here that, to a certain extent, the patient had become accustomed to the trouble occasioned by the passage of food, and could now swallow fairly well.

This condition was attended by little digestive disturbance, beyond, on rare occasions, slight attacks of diarrhea; but, on the other hand, gastric crises became pronounced and seemed to be especially aggravated by

[1] Read before the Philadelphia County Medical Society, April 26, 1893.

any form of mercurial treatment. These painful attacks continued throughout the progress of the case, and were equally noticeable during a course of restricted diet.

In the eighth month the anemic condition was extremely marked, and the patient, from a weight of one hundred and ninety pounds was reduced to one hundred and forty pounds. In despair he entered the Pennsylvania Hospital, but remained only for two weeks, his chief grievance being the restricted diet to which he was subjected, and which ill-accorded with his continued enormous appetite. During this, as well as on previous occasions, careful and repeated examinations revealed no disease of the special organs.

An examination of the blood showed three million red corpuscles per cubic millimeter and a diminution of the hemoglobin to 40 per cent. An anemic basic murmur, as well as a venous souffle, was also to be detected. Added to this, the prostration, the sallow complexion, the pallid face, pinched features, and sunken eyes, made a picture long to be remembered.

In the tenth month esophageal obstruction was complained of, and an examination by bougie, made by Prof. E. Laplace, showed some constriction, which, however, did not become extreme. At this time localized pain in the lumbar region began and soon became excruciating in severity. This was attended by occasional loss of control of the sphincter of the bowel and remained present until the close of the disease.

Some three weeks before his death he was removed from under my care to the Medico-Chirurgical Hospital, but the prostration became more marked and he died a little over one year after the beginning of the disease.

Unfortunately, notwithstanding strenuous efforts, a post-mortem examination was refused.

As may be imagined in a case of the foregoing character, our treatment was as varied as it was unsuccessful.

Early in the case the exhibition of either mercury or of potassium iodid seemed to aggravate the gastric crises, and, besides, to be followed by an irritative diarrhea. Inunctions were tried, but with similar results. Fumigations were likewise discontinued for the same reason, and even the recently vaunted hypodermatic method was certainly open to the same objection. The inunctions were continued for the longest period of time. General tonic treatment, although better borne, was of little apparent use.

On investigating the literature of this subject I find a rather growing tendency among the more recent syphilographers to appreciate that our accepted laws regarding the three fixed and precise stages of the disease must submit to some modification. For example, Keyes, in his last edition, writes as follows:

"The line between secondary and tertiary syphilis is not always well marked, and although in typical cases the lesions become progressively deeper, commencing as mere efflorescence in the secondary stages, and gradually increasing in severity to the most extensive ulcerations and destruction of bone and cartilage in the tertiary, yet some of the symptoms naturally belonging to the secondary group, as the mucous patch and scaly eruption, frequently crop out in the tertiary stage, while more rarely nodes come on with early syphilis, and occasionally most extensive ulcerative or other tertiary (gummy) lesions appear within the first few months after chancre, perhaps all the lighter secondary eruptions having been omitted. This form is called malignant syphilis."

Osler[1] tells us that "In exceptional cases, manifestations which usually appear late (such as gummatous growths) may set in even before the primary sore has properly healed."

C. Mauriac, one of the most eminent of the French authorities, in his very interesting work,[2] details the history of a number of cases, of which the following is a short *résumé*:

OBS. I.—Case beginning with indolent enlargement of both inguinal glands. Eight days afterward there was appearance of chancre. On the twentieth day of the initial lesion there were attacks of cephalalgia with appearance of frontal tumors; then secondary symptoms, cutaneous and mucous, etc. Mixed treatment was instituted, followed by cure.

OBS. II.—Period of incubation of two months' duration, with short duration of secondary symptoms. Parietal tumor with neuralgic pains.

OBS. III.—Omitted. Dates uncertain.

OBS. IV.—Chancre of lip, and swelling of the cervical glands. One month afterward, slight secondary symptoms were followed by a tumor on the parietal bone.

OBS. V.—Syphilis of five months' duration without treatment was followed by a tumor in the fronto-temporal region, etc.

Mauriac claims that these nodes are the result of periosteal inflammation, and tend to spontaneous recovery without suppuration. But he quotes an account of a case reported by Dr. Henri Roger, which resulted in a different manner:

A girl, aged two years, acquired syphilis by kissing an infected mother, and presented the following lesions at the same time: 1st. Indurated chancre on the superior lip, not yet entirely healed. 2d. Copper-colored spots of roseola on thighs, on forehead, nose, and cheeks, and mucous patches on the vulva and anus. 3d. Multiple exostoses; gummy tumors of the frontal bone the size of a filbert, with healthy skin-covering, and semi-soft consistency; the right one reddish and shining at the apex, imparting the sensation of fluctuation, and which did in time suppurate.

Mauriac details the occurrence of other cases presenting similar lesions in the bones of the legs, sternum, and other parts of the body.

In these thirteen cases the shortest period of incubation after the appearance of the chancre was fifteen days, and the longest one hundred and twenty days. Curiously, the shortest of the series presented a history which resembles the one forming the subject of this paper. Briefly stated it is as follows:

OBS. VII.—The patient, a man, nineteen years of age, of habitually good health, had a urethral chancre, which showed itself one month after his first connection. On the forty-fifth day he had acute pains in the tibia, followed in from twenty-six to forty-eight hours by the spontaneous appearance of a bony tumor. Alteration of general health ensued. On the sixty-ninth day well-

[1] Practice of Medicine, 1892.

[2] Mémoires sur les Affections Syphilitiques précoces du Système Osseux. Paris, 1872.

characterized roseola appeared. On the sixtieth day there was diminution of the tibial tumor and final disappearance of it. Four and a half months later mucous patches appeared on the lips and prepuce. Papular syphilis, etc.

Vidal de Cassis[1] reports the case of a tumor of the right clavicle occurring one month after chancre. The skin-covering was perfectly healthy, the tumor twice the thickness of the bone. There were extreme localized pains. Cure resulted in two months' time. Dr. Guyot[2] reports a case of syphilitic periostitis of the first metatarsal bone, fifty-six days after infecting exposure.

According to M. Daga,[3] syphilis is so severe among the Arabs that it is not rare to witness in the same subject the presence of syphilides, of gumma, and of multiple exostoses. Tertiary symptoms themselves may be observed at the very beginning of the disease.

According to the researches of M. Maltegazza[4] syphilis pursues its course with great rapidity in South America, and manifests itself from the beginning not only by superficial cutaneous and mucous lesions, but by osseous lesions and even the destruction of the bones of the nose almost immediately after the appearance of the chancre, and always before its cicatrization.

As eminent an authority as Prof. Hutchinson,[5] of London, reports the following interesting case:

"A young man, aged twenty-one years—too young, let me note, for it to be likely that he had ever had syphilis before—was admitted into the London Hospital. He had still the remains of a hard chancre on him which was ulcerating in places. The date assigned to the beginning of the affection was only four months previous. He died suddenly and unexpectedly. The necropsy showed gummata in both testicles, in the spleen, and in the heart, death having been caused by the softening ulceration of the latter."

He adds, in conclusion:

"I have urged that many of the phenomena of syphilis usually counted as tertiary really occur, as a rule, in the early periods, and there is no structure of the body which may not be attacked in the secondary stage. As an instance of this fact, I have mentioned rupia, periostitis, and disease of the viscera and nervous system."

Dr. R. W. Taylor,[6] of New York, reports several interesting cases of the gummatous form of the skin-affection. He says, in conclusion, that these lesions may appear as early as the second, third, or fourth month after the initial lesion and may terminate in ulceration.

Records of early syphilis of the nervous system are also attainable. Taylor reports a case of hemiplepia in the fifth month; Bassereau et Vidal de Cassis, one of facial paralysis a few weeks after appearance of chancre. Van Buren and Keyes and Fournier respectively detail several instances of different forms of paralysis occurring before the fifth month. Fortunately these cases are very rare. For example, Mauriac mentions that the thirteen cases reported by him represented an experience of over four thousand cases of syphilis. Whether they represent an unusual amount of the virus absorbed, or an undue susceptibility on the part of the individual, is an open question.

The general opinion would seem to indicate the possibility of a severe syphilis following a case of phagedenic chancre, as, for example, Batington[1] tells us that "The symptoms which follow the phagedenic sore are peculiarly severe and intractable. They commonly consist of rupia, sloughing of the throat, ulceration of the nose, severe and obstinate muscular pains, and similar inflammation of the periosteum and bones. Similar complaints will follow the ordinary chancre; but when they follow a phagedenic sore they are very difficult to be cured; and it is not uncommon that the constitution of the patient should at length give way under them, and that the case should terminate fatally." Bassereau,[2] as well as Diday, agrees in the main regarding these statements. Bumstead and Taylor[3] in commenting on the foregoing, express themselves as follows: "Admitting the truth of this rule, it does not follow that the condition of the chancre in any manner determines the severity of the subsequent symptoms, but merely that it is an indication of the activity of the virus and of the state of the patient's system—the two causes upon which the severity of the attack chiefly depends."

The latter observation does not agree with the history given both by my patient and the members of his family. It was particularly claimed that he had enjoyed unusually good health throughout his life, nor was the quantity of alcohol which he took in excess of that commonly used in his occupation.

Regarding the presence of the nodules on the tibia, these latter occurred after a longer period of time than in the one case (Obs. VII) reported by Mauriac, yet the gummatous ulceration of the hard palate at so early a period is, as far as I can discover, without a detailed precedent, and certainly places this history prominently among similar records.

1 Traité des Maladies Vénériennes, 2d edition, pp. 479, 480.

2 Société Médico-Chirurgicale de Paris, July 9, 1868.

3 "Documents pour servir à l'Histoire de la Syphilis chez les Arabes," Archives de Médecine, 1864, t. ii. p. 314.

4 Quoted by Mauriac.

5 "Some of the Moot Points in the Natural History of Syphilis," British Medical Journal, January 23, 1886.

6 In an article entitled "Precocious Gummata," American Journal of the Medical Sciences, July, 1887.

SECONDARY CELIOTOMY FOLLOWING AN OÖPHORECTOMY.

BY RUSSELL CAFFERY, M.D.,
OF SAN ANTONIO, TEXAS.

MEDICAL journals chronicle but few cases in which secondary celiotomy is performed for the relief of the same symptoms for which the primary operation was undertaken. A case requiring such interference has come under my care during the past summer, and will serve to illustrate how symptoms and conditions entirely local in character, and of sufficient gravity to necessitate surgical interference, may arise.

Some six years ago the patient, after submitting to a criminal abortion, was confined to bed for two months. From that time she experienced constant pain in each iliac fossa, which was much worse at the catamenial epoch. The severity of the pain was augmented each

1 Ricord and Hunter: Venereal Diseases, 2d edition, p. 371.

2 Bassereau: Histoire Naturelle de la Syphilis, p, 84.

3 Bumstead and Taylor: Venereal Diseases, 5th edition, p. 499.

month, until metrorrhagia was added to her already long list of ailments. Toward the close of the year 1888 her suffering became intolerable and she sought relief at the hands of an eminent gynecologist in one of the northern cities. She tells of days spent with electricity and massage in an effort to obtain relief, but, to use her own words, "If such a thing were possible, I grew worse." Finally, oöphorectomy was proposed to her as being the only possible means of relief, and as offering a reasonable amount of certainty as to a permanent cure. The woman readily assented, so firmly resolved was she to obtain relief at any sacrifice. The operation was performed a month later. The ovaries were enlarged and cystic, and were removed. Speedy recovery followed.

In six weeks from the time of the operation the woman left the city much improved and free from pain. Her period of immunity from suffering was destined to be short, for after the lapse of a few months she awoke one morning to find the "same old pain" in her left side, though somewhat modified in character. As time went on, her suffering grew more intense until it had assumed its previous severity, and differed only in that it was a little more intermittent.

The limits of tolerance were again reached, and she applied to me several months ago for relief. She was then suffering from exaggerated metrorrhagia, the hemorrhage being so profuse that when it occurred simultaneously with a paroxysm of pain syncope followed. This hemorrhage was regarded as entirely symptomatic, and a thorough investigation as to the exciting cause was decided upon, chloroform-anesthesia being employed.

On examination of the genital tract the cervix uteri was found lacerated, as a result of former labors. The cervical canal was patulous. The uterus was anteverted; the depth of the uterine cavity was quite a half-inch in excess of the normal; and its interior was covered with fungosities. Further examination revealed the presence of a tumor in each iliac fossa in the normal situation of the appendages. The body upon the left side was slightly larger than a hen's egg, rather dense, but fluctuating over a circumscribed area. The mass on the right side was irregularly shaped, dense, and thoroughly immovable. At this time the fungous growth lining the endometrium was removed with the curette, the cavity thoroughly irrigated and packed with iodoform-gauze, and the patient put upon quinine and strychnine, alternating with syrup of iron iodid.

The metrorrhagia ceased, but the pain in the side continued with unabated intensity. Operation was again proposed and assented to. On September 5, 1892, celiotomy was performed according to strictly aseptic methods. The tumor on the left side consisted mainly of a section of ovary in a state of cystic degeneration, quite a mass of adhesions and semi-organized blood-clot, all bound by adhesions and in intimate contact with the excised end of tube, of which about two and one-half inches remained. The tube was ligated with braided silk at its junction with the fundus uteri, and excised. The mass was then included in a Staffordshire knot and removed. A like condition of affairs existed on the opposite side, with the exception of cystic change, and similar treatment was employed. The abdominal cavity was then irrigated with sterilized water, and the wound, including the peritoneum, closed with silver wire.

Fully two hours were consumed in the operation; shock was, however, but slight. The temperature was 99° F.; the pulse 98; the respiration 20.

The woman received hypodermatically morphine, ¼ grain, dissolved in brandy, besides tablespoonful quantities of hot water to control nausea. The temperature remained normal until about the end of the second day, when it went to 101° F., the highest point reached at any time. The bladder was evacuated by the catheter. The bowels were moved on the sixth day by means of warm-water enemata. Drainage was insured by means of a glass tube into which were dipped strips of iodoform-gauze, and this covered with oiled silk, in addition to the regular abdominal dressings. The strips were withdrawn twice daily and the accumulated fluid removed with a glass syringe and rubber tube. The drainage-tube was removed on the fourth day, and the stitches on the tenth.

The patient progressed to a satisfactory recovery, without an untoward symptom; she sat up in bed on the eighth day, in a rocking-chair on the twelfth, was moving about her apartments on the fourteenth, and went carriage-riding on the sixteenth day. On the twenty-fifth day she set out on a journey of five hundred miles, and now (some months since) says that she feels as she has not felt since maidenhood.

Just at this time, when some of our gynecologists are in the throes of an unstable reaction against what is termed the "indiscriminate emasculation of females," this case appeals to my mind as being of peculiar interest. From the patient's history and the conditions found, doubt no longer exists as to the intentions of the primary operator. It was a step in the direction of conservative tubo-ovarian surgery—a laudable ambition, no doubt, but of its wisdom, subsequent developments in this case must decide.

Eminent men are now advocating conservatism in ovarian surgery, meaning the partial extirpation of tubes and ovaries having undergone morbid changes. Men who have risen to the topmost heights of the ladder of fame, and who have grown weary of their successes in the practice of gynecology as it is known to-day, are now seeking new gynecologic fields to conquer, and are at the same time telling us that the very methods by which they have ascended to these dizzy heights are unstable, that the practice is based upon wrong principles, and is destined to become obsolete, to be supplanted by the "more modern method of conservative surgery."

Conservative ovarian surgery will no doubt become a recognized and established practice, applicable only to a few rare cases not recognizable by the average operator, but only by men doing a highly specialized practice in this department. Then, to our mind, the duty of the surgeon is plain. If, after he has opened the abdominal cavity and finds changes sufficient to warrant his molesting the ovaries and tubes at all, they should, if possible, be removed entirely. The histologic structure of the organ and the character of the morbid processes usually sought to be corrected, to my mind constitute an insurmountable obstacle to any practical good we may hope for from our efforts to arrest the progress of the disease. This, with the gravity of the operation itself, ought to

warn the surgeon against subjecting a patient to the risks of a second celiotomy simply in the hope of re-establishing and perpetuating the function of ovulation, when we know that, of necessity, it will be defective and unsatisfactory.

RECOVERY AFTER SWALLOWING A TEASPOONFUL OF AMYL NITRITE.

BY GEORGE ERETY SHOEMAKER, M.D.,
OF PHILADELPHIA.

A SHORT time ago I was hastily summoned to see a man, sixty years old, of robust physique, who had by mistake taken a teaspoonful of undiluted amyl nitrite. About three minutes after the drug was taken I found the man sitting in a chair, with a moderately flushed face, a pulse of 112, and complaining only of a little headache. Being of a sluggish temperament, he did not appear to realize the gravity of the situation, and received philosophically the treatment instantly instituted. He was successively given several glasses of warm water; a hypodermatic injection of gr. $\frac{1}{8}$ of apomorphine; mustard in warm water; zinc sulphate in warm water; another gr. $\frac{1}{8}$ of apomorphine; more mustard and warm water; so that just seven minutes after he took the drug copious vomiting of a very hearty unmasticated meal occurred. The evacuated matter emitted a strong odor of amyl nitrite. Vomiting was very copious indeed, the quantity of food, evidently just eaten, being enormous. Digitalis and brandy were now injected beneath the skin; and the patient was put to bed and surrounded by hot bottles. His face was moderately blue; the extremities cold; respiration shallow, but regular; the pulse weak, but only 68 to the minute, five beats being dropped in that time. Strychnine sulphate in doses of gr. $\frac{1}{30}$ was frequently repeated; digitalis and brandy were continued, and external heat was maintained. Two hours later the pulse had ceased to intermit, and the patient was even jocular, though weak. The next day nothing abnormal could be detected in his condition.

Consciousness was not lost at any time, though the man seemed drowsy and stupid. There were no twitchings or convulsions, no irregularity of respiration. The man was constantly watched and every symptom carefully noted as to time, a record of pulse being taken every five minutes, but no symptoms developed beyond those narrated. To avoid alarming the patient and arousing his suspicions, which seemed to be marvellously few, no effort was made to learn subjective symptoms.

Recovery was due to the fact that the patient's absorptive powers were sluggish. He no doubt had a dilated stomach which he had just filled with food. The promptness with which it was possible to empty the stomach and administer stimulants no doubt also helped in the fortunate outcome.

An examination of some leading works on therapeutics gives the reader little help as to the proper treatment of poisoning by amyl nitrite.

Digitalis and strychnine were pushed in this case because the heart was failing.

3727 CHESTNUT STREET.

Erb has declined the chair of the Second Medical Clinic in the University of Vienna.

ORIGINAL LECTURES.

TWO CASES OF PULMONARY TUBERCULOSIS: ONE CHRONIC, ONE ACUTE.[1]

BY WILLIAM PEPPER, M.D.,
PROFESSOR OF THE PRACTICE OF MEDICINE AND OF CLINICAL MEDICINE IN THE UNIVERSITY OF PENNSYLVANIA, ETC.

GENTLEMEN: I showed you last Saturday a case and specimens illustrating chronic pulmonary tuberculosis, and I have this morning to show you several patients presenting different phases of this so prevalent and so terrible affection.

This man is fifty-two years old; there is no family history of pulmonary disease; his father died of cholera, his mother at eighty years, of old age. He himself has been sick for seventeen or eighteen years, beginning, therefore, when he was about the age of thirty-five; he has had within this time more or less continuous cough, and three distinct hemorrhages.

The physical signs are: A flat chest, with prominence of the scapulæ and clavicles; increased fremitus on both sides; dulness at the upper portions of both chests; a slightly emphysematous condition of the lower lobes; the auscultation signs correspond, showing lesions at both apices.

Now, here is a case that illustrates, in the first place, what we so often see in pulmonary tuberculosis, an absence of hereditary tendency. It is the greatest mistake in the world to suppose that if you are not of a tuberculous family that you cannot become tuberculous. It is perfectly true that heredity is of immense importance. That children of parents who have had pulmonary tuberculosis are proportionally more disposed to it than those who are born of healthy parents is unquestionably true. I pointed out to you, when speaking of tuberculosis, how little children born of tuberculous parents are likely to have tuberculous meningitis, the early manifestation of tuberculosis; how it has been shown that the fetus may come into the world tuberculous; do not let us, therefore, underestimate the importance of heredity.

When a patient coming from a tuberculous family has escaped in childhood and grows up, and then is taken with the disease, say at twenty or twenty-five, the fact that his family history is bad is a very unfavorable element in the prognosis. In some families there seems, therefore, to be a special liability to invasion by this disease. Just so, on the other hand, there are cases, as in that the specimen from which I showed you, and in those to which I alluded, in which the lungs and the system seem able to repel the disease, or in which it is circumscribed by fibrous tissue and its progress arrested and limited to a small area until old age, when the person dies of some other disease, and the evidence of the infection is found at the autopsy. On the other hand, in some families it seems that there is no power of resistance; the system does not react against the invasion. There must be some anatomic defect in such people or some chemical defect, for the process when once implanted spreads rapidly.

While, then, it is true that families that have had pul-

[1] Delivered at the University Hospital, Saturday, February 25, 1893.

monary tuberculosis often show the disease in successive generations, none the less is it true that some of the strongest people that come under your observation are those born of tuberculous parents. I remember the case of five children that I have known as if they were my own. The oldest boy died of a fearful outburst of universal miliary tuberculosis; every organ in the body was affected, the membranes of the brain, of the heart, the lungs, the liver—every part of the body was studded with tuberculous deposits. At that time the parents of that child were young, vigorous people, under the most favorable circumstances. Other children were born, and after the fourth, the father developed the affection, of which he died in about two years. The youngest of those four children was raised with great difficulty, and gave me much anxiety, but he is now a rugged boy. About five months after the father's death the widow gave birth to a posthumous child, and this child is the strongest of the five. The power of the mother to imprint her splendid constitutional health upon that child asserted itself to such a degree that, although at the moment of procreation the father was in a state of advanced tuberculosis, he was utterly unable to taint or vitiate the system of the product of conception. Marriage discloses many problems of this kind.

Of course, the worse cases of transmitted tendency are those in which both sides are diseased, in which the child is vitiated by both sides. If one side, particularly the maternal, is free, you may find in a group of children, when even one or more show a tendency to pulmonary tuberculosis, some with constitutional vigor. In the next place, however, do not let these instances lead you to give any assurance to a person born of perfectly healthy parents, who have no disease at all, whose life-history is good, but who are in delicate health, that he is not liable to this disease. No matter of what nature the ill-health of the parent is, the child may come into the world with a defective resistance-power, and let that child become catarrhal, and the bacilli of tuberculosis get into its system, it may not be able to repel them, and the disease may progress with as great rapidity and virulence as if the parents had actually been tuberculous. Then, although both parents are perfectly well, with no disease as far back as you can get, never shut your eyes to this fact, that on provocation every one of us is liable to the disease. Let a person task his strength, let a growing child become weedy and lank and below weight, and the system relaxed, and there is developed a field where tuberculosis, if implanted, will spread.

Now take the case of this man. His father died of an acute disease and his mother of old age at eighty. What gave him the disease? He had gone to the age of thirty-five; he was born in Antwerp, was living in London when taken ill, and was working as a cigarmaker; he was the father of children; he got on well and had to work but eight hours a day; he states that there was not much dust where he worked, but that among the workpeople in the factory there was more or less sickness of the kind from which he suffered, and I know that it is a depressing business, and that it turns out a large proportion of sick, due to the dust-laden air, which lowers the physiologic tone. The patient tells us further that this trouble came from a cold; he had a cough, and took something for it, and kept on at work. That is the usual story, and there is a great deal of truth in it—not that the "cold" is tuberculosis of the lungs, for we know better than that now. We know that people do not have the disease unless they become infected by the bacillus of tuberculosis; but we also know that to prepare the way for the invasion of the bacillus there is nothing like a catarrh. Get a local catarrh, so that the mucous membrane becomes porous and sticky with mucus, and the bacillus lodges there and gains entrance to the superficial layers; and then, unless the system is vigorous and repels the disease, it may advance and spread. There is none here who has not had tubercle-bacilli enter his air-passages, but there must be some resisting power which has made it impossible for these organisms to gain entrance into the system, and which has prevented them from spreading. I have breathed the exhalations of tuberculous patients daily, yes, almost hourly, I might say, for years, so that there must be some power within me which repels them. But on the other hand, in those who are weak and have not the resisting-power, infection will occur, and pulmonary tuberculosis is the result.

This man probably had some catarrhal process before he became infected. Some pathologists laugh at the idea of a cold having anything to do with it, and say that it is inevitably an infective process; but it is not so clinically. The system gets "runs down;" then follows a cold, a catarrh, the bacilli lodge, get into the pores of the mucous membrane, invade the tissues, then spread; hence the catarrhal element can never be dismissed. When Niemeyer said that the worst that could happen to a consumptive was to become tuberculous he said a very impressive thing, which has been ridiculed a great deal; but he announced a great clinical truth, and one in which clinicians will concur, that there is thus a pre-tuberculous stage, when the system is getting ready, and then, in many cases, infection occurs, the bacilli spread, and the disease becomes established.

I do not know about this man; perhaps the tubercle-bacilli irritated his mucous membrane and caused the catarrh, as is contended; but it is often the other way, rather than being tuberculous from the beginning. So, in spite of the work of the bacteriologists, I stand very much on the same ground that Niemeyer did, only nothing like to the same extent, anatomically speaking.

After this man got the disease, see how hard he fought it! He is not half dead yet, though he has been affected for seventeen years. There comes the thought, has not the fact that there is a tough fiber in him, his mother dying at eighty years, and his father of an acute disease, and he not having the tuberculous tendency—has not that helped him? Of course it has; and so we recognize on both sides the value of this hereditary principle.

As we examine him we recognize a typical case of the chronic type of the disease—long fingers; blue, incurved nails, the result of chronic capillary stasis, such as I have shown you so often in long-standing venous obstruction; very white, delicate surface; sensitive skin; muscles relaxed. He has not at all a bad-shaped chest; rather high shoulders, prominent clavicles, but the tissues are all wasted here, and when he was in good condition he undoubtedly had a good chest. Coughing and weakness of the muscles have caused a "hunching" forward; but

you would not speak of this as a tuberculous thorax; it presents the appearance merely of an emaciated thorax. The man breathes rapidly, with a good deal of up-and-down motion, and very little expansion. There is no obstruction to interfere with the air going into the lung-tissue; there is no mechanical obstruction in the larynx to the entrance of air; the obstruction lies more deeply in the lung-tissue itself, and we have this recession, almost, of the base of the thorax; it moves out a little on the left side, with a good deal of the motion of elevation and depression. There is a cracked-pot sound over the left clavicle, and a little clinking sound; at the right apex there is marked impairment; there is resonance around the right nipple, but nowhere flatness, nowhere marked dulness. That little chink on the left may be due to what we sometimes elicit by suddenly compressing the lung and forcing the air out of the tube, which gives us a pseudo-cracked-pot sound. In these old cases you must be prepared to find the dulness greatly obscured by surrounding emphysema, and you will estimate the disease less by the results of percussion than by those of auscultation. The lung-tissue has become so distended by prolonged, violent coughing that there are patches of emphysema, and they obscure the dulness and the little areas of consolidation.

On auscultation I find copious moist râles over the upper part on the right, with prolonged expiration, and close up under the clavicle a very limited area of tubular breathing. This latter is either owing to consolidation around the main bronchus, or there is a little cavity at the extreme apex. Posteriorly the cavity extends to the back, and is quite large, giving rise to blowing breathing, large moist râles, and pectoriloquy. There is, then, a scattered area of infiltration over the anterior part of the lung, and at the apex and more posteriorly an excavation with large almost bubbling râles and pectoriloquous voice. Now, you would not suppose from the percussion that there was so much trouble there; yet how little disease there is when we consider how long it has lasted! On the left side there is freer movement than on the right; there is blowing respiration, distinct pectoriloquy, with noisy respiration all around, and only a few râles. There is evidently an old cavity at the extreme apex and emphysema all around it. The posterior part of the lung is in fairly good condition, and the resonance is little altered.

Now what has saved this man is the fact of his great physiologic repugnance to admit the bacilli into his system; his tissues have resented their attack; the disease has been limited all these years to the very apices of the lungs. Note how constantly it is that the apices are affected in this disease, though not invariably so; you may find a patch at the root, or even at the base; but in the vast majority of cases you will find in cases in which the base is involved, that the disease begins above and spreads downward; but this man's system has not allowed it thus to spread. On the left side the lung has become enlarged, emphysematous, and the disease has become almost entirely restricted; so that as far as the left lung is concerned the man may live indefinitely. The spot on the right side is the only one we have to fear, for the numerous râles make me think that it has a tendency to spread, but this can be told only by watching him from time to time and weighing him, for a study of the movements of the body-weight is most important. As long as a man holds his own in weight, or gains a little, the physical signs may continue month after month, year after year, and if the disease does not spread, and the system keeps up its level, we have not a general but practically a local tuberculosis, the system having prevented general infection. What this man has to fear is the breaking of the bacilli from their bounds and spreading, and so a little patch on the left side behind the scapula would mean more than any continuance, however prolonged, of signs on the right, with the most copious expectoration, or even actual hemorrhages—of which this man has had three.

His is a splendid case, and one worth working for, and I hope by persistent hygienic care that the disease can still be localized; that if the conditions of life favor him, he may go on many years without this spreading and becoming general, without its carrying him down. I have just learned from his physician, who examined him three years ago, that there is practically no change in his physical signs.

Our second case is L. W., aged twenty-three, a child's nurse; her father died of asthma, her mother of pulmonary tuberculosis. Here you see we have just the opposite point of view from that of the preceding case. This asthma may, indeed, have been asthma, and it may have been a chronic disease, like tuberculosis or emphysema, with a great deal of bronchitis. The parents had a numerous family—no less than nine children—and of these, six, including the patient, survive, two sisters and a brother having died of tuberculosis of the lungs; three sisters and two brothers are living, but none of them is very strong. Now this family history is in striking contrast to that of the last case, a notable illustration, too, of what I said to you of the great gravity when both parental families are affected; and of the fact that such offspring are not very strong, that they are usually below weight, and very liable to suffer from catarrhal processes, and that when attacked by tuberculous infection they prove to have a very poor resisting and limiting power.

The patient is now twenty-three, was always strong until she was nineteen, since which time she has had more or less cough, with no constant expectoration, or discharge of blood. Three months ago she was examined first, carefully, by Dr. Daland, who found signs of incipient trouble at the right apex. To-day the note is: "Slightly diminished expansion, increased fremitus and resonance more distinct, feeble inspiration, prolongation of expiration, which is also harsher than it was three months ago. Until three weeks ago she gained in health and weight, weighing five pounds more than in November; during the past two weeks she has lost two pounds, largely due to loss of sleep."

Here is a marked hereditary tendency in a girl who was strong until four years ago. What I wish you to realize is, that this girl was under no necessity to get this disease, and I do not know that she would get it now if she were under favorable circumstances. If she had had a good hygienic life, with good surroundings, there is no reason why she should not have gone on being a strong girl, and if you can keep these cases strong until their frames have developed they may become the very strongest of the strong through life.

Nothing is more certain than that the tendency may be eliminated by hygiene. If you take children of parents whose history is very bad, and they are protected properly, their whole tendency may be eliminated. But what are you going to do with a girl who has to go out at the age of nineteen, among strangers, to accept a responsible position, to take care of fretful children, to lose much sleep. There is nothing which so much aids in the resistance of disease as great quantities of sleep, for during sleep the blood and the nervous power are restored; but deprive one of sleep, and how susceptible he becomes to every depressing influence, and this is doubly true in one who has an inherent weakness.

She has been coughing at intervals for several years, and during that time she had not yet developed this disease, and even then under proper circumstances she might have become a strong woman. There was a pre-tuberculous period; she had catarrhal irritation; she was overworked; she took one little cold after another; and the mucous membrane becoming more and more receptive, was apparently waiting for the time she should come across the first tubercle-bacilli to become infected and the tuberculosis started. Catarrhal irritations in the young, and especially in those known to have a tuberculous tendency, should be regarded as serious things, and heeded; they gave fair warning here, but unfortunately they could not be heeded. When a person has a tendency to tuberculosis, and then develops a catarrhal process, and it hangs about him under depressing influences, it is only a question of time when the process will start, and when once started, there is every fear that progress will be rapid.

This girl was seen three months ago with the little trouble at the right apex. She has a good, plump arm, well-built chest, good muscles, and a good heart, an important factor. There is absolutely normal breathing at the left apex; at the right apex the first thing noticed is the weakness of the respiratory murmur. Do not always be listening for râles, or for some great change, like blowing breathing. It is really of the greatest importance to recognize beginning changes before the stage of râles or blowing breathing is reached. The inspiratory murmur also at the right apex is not one-third as full and strong as it is at the corresponding spot on the left side, and you should never fail thus to examine corresponding sides, as all the conclusions we draw are from comparison. When I ask her to cough not a single râle is elicited. Posteriorly there is prolongation of expiration, slightly blowing—not one râle front or back. There is good percussion-resonance posteriorly; distinct increase in the vocal fremitus and vocal resonance; anteriorly on the left, perfect; on the right, quite good resonance. If there is any difference it is simply a lack of power of expansion at the extreme apex. Now what does this mean? Why merely that there is a little thickening, a little catarrhal process in the mucous membrane, which has now extended to the alveolar walls, and there is a little thickening of the walls, which has lessened their elasticity and, they do not open and close as promptly and with the freedom of a perfectly healthy lung. This causes weakness of the respiratory murmur, with prolongation of the expiration. You may not speak of it as consolidation, but only as the slightest degree of thickening; but you can never expect any human being who has such a process there to escape infection, and with a person like this, if the tuberculosis is once implanted there it would be tremendously hard to expel or eliminate it. She raises no phlegm, yet she has some fever; her pulse and heart are good; her general strength is good. I don't like this vivid flush of the cheek; it rather indicates lack of vascular tone, and that is part of the increased tendency to infection, as persons with such circulations seem to me rarely to possess strong power of reaction.

Now, if this girl has no rise of temperature there is still ground to hope that the process does not tend much to spread; but there has been considerable increase in three months, and everything here justifies anxiety; she must be watched in the most careful manner. She has gone through a dreadful winter with troublesome little children to take care of; but the spring is coming, and I would not attempt to break up things or to urge her in any way to give up her work at present. If, however, with favorable weather, May does not find her cough decreased and her weight improved, then comes the time for something more radical, and everything must be done to give her a year or summer to react and thwart this process. Can there be anything more piteous, more sickening and heart-breaking than to deal with cases of this kind, when you cannot do for your patient the very best thing that can be done? It is to be simply a question of diet, of hygiene, with something to allay the cough. The radical thing is the ability to go to a different climate, and have a life of two or three years absolutely without occupation, without care, where there may be every comfort, and the most advantageous surroundings. Grant these to patients, and they are put under the most favorable conditions to combat the disease, or if we had more country homes or farms, where such people could be sent and have proper supervision, it would go a long way toward breaking up this disease. Unfortunately, now it has spread to such an extent that we can only attack it here and there; but we know that this is the greatest battle to engage in, this battle with tuberculosis, and there is nothing that you can do that will benefit future generations so much as devoting your best efforts to prevent the spreading of this disease.

The stage in which this girl is is the time for making a diagnosis, where there is a chance for radical cure. I am as sure as finite being can be, if this girl could go to Colorado, and stay there, or to any dry, bracing climate in the country, and live out of doors and take care of her herself, that this would be stopped and she would become a perfectly healthy woman; but that is a different thing from being in a nursery, with troublesome children, and having the sleep broken—away from her own people, and subject to all kinds of depressing influences.

Of the medicinal treatment of the disease and its complications I shall speak at my next clinic.

"The Conduct of the Medical Life."—In reply to a correspondent we would state that the two letures of Dr. S. Weir Mitchell, on *The Conduct of the Medical Life*, will be sent to anyone who remits twenty-five cents to the University of Pennsylvania Press, Philadelphia.

AMPUTATION OF LOWER PART OF THIGH.[1]

BY WILLIAM S. TREMAINE, M.D.,
OF BUFFALO, N. Y.
EMERITUS PROFESSOR OF SURGERY, MEDICAL DEPARTMENT OF THE NIAGARA UNIVERSITY; MAJOR AND SURGEON, RETIRED, U. S. A.

THIS patient has suffered for several years from pain and swelling of the knee, which he has supposed to be rheumatic. Although the knee had already become somewhat stiff, he last year began bicycle riding upon the recommendation of some of his friends. I am not familiar with the therapeutic value of the bicycle; but, in this case, it has proved detrimental, and his trouble has increased so much that he has been forced to seek surgical aid. The case is one of tuberculous arthritis of the knee. One brother died of pulmonary tuberculosis; another brother is in an incipient stage of the same disease; the patient, in addition to the disorganization of the joint-tissues, has the peculiar cachectic appearance indicative of tuberculosis.

I have advised amputation, because the general consensus of professional opinion is that in patients of middle age better results are obtained thereby than from resection. Younger persons often outgrow the tuberculous tendency, or scrofula as it is called by many writers; but in middle life the disease seems to be so thoroughly implanted in the system that it cannot be eliminated except by the removal of the foci of disease. A substitute for amputation is erasion of the joint, in which case the synovial membrane, the articular cartilages, and, perhaps, a small portion of the epiphyses of the bones are removed. This operation is also called arthrectomy, but I think the term erasion is preferable. Another substitute is resection. This, I believe, should be confined to young subjects—that is, children under sixteen years of age.

However, almost any of us would be loath to lose a leg, and I suggested to this patient that, in lieu of amputation, the next best thing would be to open the joint and remove the synovial membrane and such other structures as might seem necessary. Eight months ago I did this operation, and found that the disease was limited to a pulpy degeneration of the synovial membrane. I removed the synovial membrane, the underlying articular cartilages, and the patella. The patient recovered from the operation, the wound healing in a few days, except for a fistula where the drainage-tube had lain. I would add that, if I had to do the operation again, I would not use the rubber drainage-tube, but, in its place, strands of catgut, which will act as a drain long enough, and then will be absorbed. The rubber tube sometimes acts as a seton and delays union.

The real cause of the fistula, however, was that, on account of the strong tuberculous tendency of the patient, the disease was not entirely mastered. Through the summer months he did well, and efforts were made to improve his condition by hypophosphites, cod-liver oil, a hygienic regimen, and out-of-door exercise. Although his general condition improved, he was unable to use the knee; any attempt to put the foot on the floor caused pain, and he was obliged to go about on crutches. A week or two ago the pain became worse, there was more discharge from the fistulous orifice, and I asked Dr. Park to see the case with me in consultation. I had already expressed the opinion that amputation was the only proper course, and in this view Dr. Park concurred.

Various methods of amputation are preferred by different surgeons. Amongst the older surgeons preference was usually given to the flap method, because it was so quickly performed—an important thing in pre-anesthetic days. Since the introduction of anesthetics and antiseptics, and of almost perfect hemostasis, time is not such an important element in estimating an operator's skill. One objection to the flap operation at the lower third of the thigh is that the femoral artery is split by the transfixion knife. The general opinion now is in favor of making what are called skin-flaps, very different from the flaps representing the entire thickness of the limb from skin to bone. The skin-flaps may be made either laterally or antero-posteriorly. In many acute cases of injury calling for amputation, we are limited in our choice of operation by the amount and location of unmutilated skin at our disposal, and we are often forced to make atypical combinations of flaps and to take the theoretically least desirable course in meeting the practical demands of the case.

Owing to the triumphs of antiseptic surgery, however, the necessity of amputation in traumatic cases has been lessened, and such operations are now performed less and less for accidental lacerations of limbs and more and more to remove extensive foci of disease. Hence, we are relatively more able now than formerly to select the exact operation which seems best adapted to the future welfare of the patient. This morning I intend to follow a method introduced by Dr. Stephen Smith, a method which is much in favor at present and which is indorsed by instrument-makers as affording an excellent stump for an artificial limb.

Now that the patient is brought before us, anesthetized, you can see the line of incision that was made for the erasion of which I spoke. The absence of the patella is conspicuous. It is not always removed at such operations; but I thought best to remove it here, on account of the disease-process, which extended into it from the synovial membrane behind. The lower part of the thigh and the leg have been shaved and wrapped in antiseptic towels after thorough disinfection. Many consider that the great care taken to render aseptic the field of operation is a work of supererogation, but one who has had experience in the pre-antiseptic days, as I have, and has compared the methods and results of the past with those of the present, must be convinced that we cannot be too careful in preventing the entrance of septic matter into wounds. In a clean building there is not so much danger of infection, but in a hospital, where many septic cases are presented in clinic, we must take especial care to prevent contamination by pathogenic bacteria.

My first incision is made across the limb in front, drawing the knife upward behind. A second incision is similarly made on the other side, the two meeting posteriorly so as to afford an opportunity for drainage in the most desirable place. The skin and superficial fascia are reflected up for about two inches and held by the retractor. The muscular tissue is now severed to the bone by a circular sweep of the knife. A modifi-

[1] The operation was performed at the Buffalo General Hospital before an audience of physicians and the students of the Medical Department of the University of Buffalo.

cation of this operation was suggested by a brilliant and promising young surgeon in the United States Army, who died of cholera while marching across the plains. I refer to Dr. McGill, son of President McGill, of Princeton University. His method consisted in dividing the bone, grasping it with the lion-jaw forceps, pushing the periosteum up to the level of the muscular incision, sawing the bone a second time at this level, and suturing the periosteal flap over its end. The principal advantage of this procedure is to prevent firm adhesions between the bone end and the cicatrix of the stump. This object can be attained by simply stripping up the periosteum, as I do here, before sawing the bone, and laying the periosteal flaps over the extremity of the femur.

Although I have had the bone held firmly, to prevent splintering by the saw, there are, as usual, a few spiculæ left, which are trimmed away with cutting-forceps. I have left what experience teaches is sufficient periosteum to prevent the adherence of the softer tissues to the bone. We will now loosen the Esmarch ligature a little and search for the vessels. Care must be taken not to include the nerve-trunks with the arteries. Prior to the introduction of antisepsis we had to leave our ligatures long, so that they could be removed when they had sloughed off. Now we cut the ends short and expect the aseptic catgut to be absorbed. We used, also, to avoid tying veins, on account of the danger of phlebitis. Now there is practically no danger of this complication, and here I tie several veins that are bleeding somewhat freely.

I now close the wound with the interrupted catgut suture, introducing a rubber drainage-tube, so that we can irrigate the cavity of the wound without disturbing the dressing, if there is any indication of the need of irrigation. In the absence of tuberculous tissue in the wound, there is no reason to expect a fistulous opening to persist after the removal of the tube. This clean cut through healthy skin and muscle is very different from the erasion of a pulpy, degenerated mass from the interior of the joint, and, although the need of drainage is less imperative here, it is a safeguard that can be employed with almost no fear that the wound will not entirely close. The first effect of a posterior-flap operation is more pleasing than this, but the makers of artificial limbs agree that the Stephen Smith operation gives the best stump in this situation.

HOSPITAL NOTE.

APICAL PNEUMONIA.

Children's Hospital, Philadelphia.

SERVICE OF MORRIS J. LEWIS, M.D.

[Reported by ALFRED HAND, JR., Resident Physician.]

J. S., male, eleven years old, was sent to the hospital as a case of typhoid fever. The family history was negative, except that his mother had died of typhoid pneumonia ten years ago.

The boy had always been well, except for a slight cough a year ago. He had had nose-bleed two weeks before admission, followed by a dull headache; his bowels were inclined to be costive rather than loose. The onset of his sickness was then sudden, four days before admission. He had a chill, pains in the back, arms, and legs, and had vomited. These symptoms, with irritability of the stomach, persisted.

There was a hard, dry cough, and examination showed that there was impaired motion below the right clavicle, with dulness on percussion, increased fremitus, and bronchial breathing down to the third rib. There was tenderness all over the abdomen, especially in the right iliac fossa, and over the liver and spleen, but these organs were not enlarged. The belly was not tympanitic, and there were no spots, but the tongue was coated, the teeth covered with sordes, and the expression of the face that of a profound typhoid state. These phenomena, together with the history, led to the belief that the case was one of developing typhoid fever, complicated with apical pneumonia.

Close watch was kept on the lung-consolidation, and the cold-bath treatment for typhoid fever was instituted. The bathing-temperature was fixed at 103°, with the bath at 80°, and the patient kept immersed until his temperature fell to 101°. Seven baths were given in the first twenty-four hours, five in the second, and five in the third. The effect of these was decidedly beneficial, the delirium, which had only been mild, ceasing, the tongue cleaning, the consolidation not advancing, and the typhoid expression gradually disappearing. The last bath was given just seventy-two hours after admission, when the temperature was 103.4°.

The temperature then fell by rapid lysis, almost by crisis, and was normal by the next morning. A crop of herpes now appeared on the lips. The temperature remained almost normal for five days, and the case was then seen to have been one of typhoid pneumonia, and not of pneumonia with typhoid fever.

Convalescence was interrupted for a day; constipation, which yielded to a saline cathartic, causing moderate fever for a short time. The consolidation resolved slowly, and the lung was clear four weeks after the boy came under observation. He was, however, kept in the hospital on account of the unfavorable surroundings of his home, until he was in robust health. He was discharged six weeks after admission, perfectly well.

The case is instructive in two points: First, as indicating that apical pneumonia in children is not always attended with marked cerebral symptoms, and may exist with almost none; and second, that cold-bathing for the hyperpyrexia of pneumonia may be of decided benefit.

MEDICAL PROGRESS.

The Action of the Epiglottis during Deglutition.—KANTHACK and ANDERSON (*Journal of Physiology*, vol. xiv, Nos. 2 and 3, p. 154), from anatomic observations and experiments on animals and on themselves, have come to the conclusion that in man, goats, dogs, cats, and rabbits, during deglutition under natural conditions, the epiglottis descends over the aditus laryngis, closing it after the manner of a lid. This lid-like action of the epiglottis is one of the mechanisms intended to protect the respiratory tract during deglutition; it is not absolutely necessary, as in man and some other animals the aditus laryngis and the superior glottis close during the

act; the glottis proper closes; the laryngeal mucous membrane is extremely sensitive; respiration ceases during the act of deglutition; and in some animals the base of the tongue may replace the epiglottis, the aditus laryngis being pulled up and firmly pressed against the tongue.

Esophagotomy in a Child.—ALEXANDROW (*Bolnitschnaja Gazeta Botkina*, 1891, No. 24; *Jahrb. f. Kinderheilk.*, B. xxxv, 3, p. 255) has reported the case of a boy who swallowed a large button and was thereafter unable to swallow solid food. Brought to the hospital after three days, an olive-tipped bougie encountered an impassable obstruction at a distance of 4.6 inches from the dental margin. On the seventh day an incision, a little more than an inch long, was made at the level of the sterno-clavicular articulation along the internal border of the sternal head of the sterno-mastoid muscle. After division of the aponeurosis the muscle and the vessels were displaced externally, the sterno-thyroid muscle and the larynx internally. The esophagus was exposed and incised and the button, 0.8 inch in diameter, removed. The hemorrhage was slight. The wound was irrigated with boric acid and drainage provided for. The patient was dismissed, cured, after the lapse of about a month.

The Bacteria of the Intestinal Tract.—GILBERT and LION (*Compt.-rend. hebdom. des Séances de la Soc. de Biol.*, sér. ix, t. v, No. 11, p. 55) have made a study of the bacteria that infest the intestinal tract, and have found that there exist a number of kinds that have hitherto been included in the generic designation of bacterium coli commune. Further investigation is necessary to determine the differential features of these various types, and to determine if there are distinct species or different varieties of the same species. In the description of these organisms it is important to precisely describe their characteristics. If the name bacterium coli commune is employed, it should be qualified by a statement as to the motility of the organism; its action upon gelatin, the character of the culture upon potatoes, its behavior in the presence of lactose, its action upon milk, and its reaction with indol.

THERAPEUTIC NOTES.

The Treatment of Syphilis by Means of Hypodermatic Injections of Mercury.—In an elaborate paper recently presented to the Philadelphia County Medical Society, J. WILLIAM WHITE maintained that the hypodermatic treatment of syphilis has not as yet yielded results that warrant its adoption as a routine method, to the exclusion of or in preference to other methods; on the contrary, it has some apparently insuperable disadvantages and even dangers that render it improbable that it ever will be so adopted.

Hypodermatic medication will find application in those cases in which other methods of treatment have been tried and failed; in those in which, owing to idiosyncrasy or intercurrent disease, the skin and the digestive tract cannot be used for the introduction of mercury; in those in which, owing to grave and advancing lesions, rapid mercurialization is absolutely necessary; in those in which obstinate localized lesions can be thus most directly reached; possibly in those in which early differentiation between syphilis and malignant disease, or tuberculous ulceration, is extremely important. The subcutaneous injection of mercurials may find practical application in shortening the period of doubt that often intervenes between the appearance of the primary sore and the development of general adenopathy or of the exanthemata. In the great majority of cases the soluble salts are to be preferred to the insoluble, as more exact in the matter of dosage and much less dangerous and less likely to be followed by local disturbances. They are always to be used when there is need for rapid mercurialization.

The insoluble salts should probably be reserved for cases in which frequent visits to the surgeon are impossible and in which no contra-indication exists. In cases of renal disease, diabetes, profound anemia, marked atheroma, great debility, etc., the method is dangerous.

Of the soluble salts the bichlorid is probably to be preferred. The results from its use are not strikingly different from those obtained from the other compounds of this class, but its stability and great solubility, as well as its germicidal qualities, seem to warrant its selection. It has the disadvantage of causing pain, but each of the salts on the list produces a considerable amount of pain and a not inconsiderable number of accidents or complications. The bichlorid probably is freer from objectionable features, in respect especially to the occurrence of suppuration, than any other salt of mercury.

Among the insoluble salts calomel and the yellow oxid are to be preferred. It would appear that the latter is a little less active, but at the same time much less irritating. Gray oil is the most available form in which to administer metallic mercury.

The Employment of Sodium Salicylate by Enema in the Treatment of Articular Rheumatism.—As a result of the employment of sodium salicylate by enema in the treatment of fifteen cases of acute articular rheumatism, seven of chronic articular rheumatism, one of pneumonia, one of puerperal septicemia, and in a healthy individual, ERLANGER (*Archiv für klin. Medicin.*, B. v, H. 2 u. 3, p. 303) recommends this method of medication in all cases in which the salicylates, though indicated, cannot, for one reason or another, be taken by the mouth. It is essential, in order that absorption take place, that, if the bowels have not been spontaneously moved, a preparatory enema of water be given to clean out the lower bowel. The medicated enema should contain from a dram and a half to two drams of sodium salicylate, with half a dram of tincture of opium and three ounces of water. It should be warm and is best administered in one dose. The nozzle of the syringe should be introduced into the bowel for a distance of about eight inches. The patient is to be instructed that the enema is to be retained and not expelled.

For Migraine.—

℞.—Butyl-chloral hydrat. . . . gr. xv.
Tinct. cannabis indicæ . . . ♏xv.
Tinct. gelsemii . . . . ♏xxx.
Glycerin. . . . . ʒiv.
Aquæ . . . . . ad ʒiij.—M.

S.—An ounce to be taken at once; to be repeated in half an hour. *Practitioner*, No. 298, vol. l, No. iv.

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SATURDAY, MAY 20, 1893.

BIOLOGIC THERAPEUTICS.

The practical application of a method of therapeutics that The News has chosen to designate biologic seems to be gradually but progressively extending. We feel that the principle upon which the mode of treatment is based has been sufficiently well established to receive earnest attention and careful consideration. It is true that we may not, at present, be in a position to give an adequate explanation of the mode of action, so that for the time being we must be satisfied with the empiric demonstration.

There can be no question as to the accuracy of the observation that the products of bacillary activity, under certain conditions, exercise a curative influence upon the disease with which the particular organism is etiologically associated. This question is one that is indissolubly associated with that of immunity. The best example of this relation is furnished by pneumonia and its antitoxin. Tuberculosis and tuberculin afford another instance; and cholera, the most recent.

There can certainly be none that will question the utility of the thyroid gland in some form in the treatment of myxedema. In spite of the distrust with which the method of treatment of Brown-Séquard has been received and the ridicule that has been heaped upon it, the fact remains that unless we can no longer believe reputable men, results little short of marvellous have been obtained, not by a single observer, but by many. It is yet too early to express a conclusive opinion as to the method of Hammond.

In the line of this thought it is interesting to read a remarkable communication by Macalister in the *British Medical Journal*, No. 1684, p. 729. Having been struck by what appeared, in two cases, to be a direct connection between the removal of the uterine appendages and the development of osteo-arthritis, the possibility occurred to him that something had been removed which was essential to the integrity of the articular structures. Inquiring carefully into the histories of a number of cases of osteo-arthritis in women, he found that almost without exception there had been some disorder of uterine or ovarian function before the appearance of the articular disease.

Pursuing his studies further, Macalister formulated the hypothesis that the glandular structures of the body elaborate substances that exert a controlling influence over the growth of individual tissues, and in those diseased conditions in which hyperplasia or hypoplasia of a single tissue-element takes place, there is an absence or perversion of the secretion that physiologically controls the growth of that particular constituent.

The opportunity of putting the theory to a clinical test was furnished by a case of pseudo-hypertrophic paralysis. The occurrence of the disease almost invariably in childhood suggested the thought that it might be due to the premature cessation of some secretion which, during early life, possibly exercises an inhibitory influence upon the production of the fibrous parts of the muscles. The thymus gland was naturally at once thought of, the functional activity of which coincides with the age-limits of the commencement of pseudo-hypertrophic paralysis. In the case of a child of fourteen, with typical symptoms of pseudo-hypertrophic paralysis of five years' standing, encouraging results followed the daily administration, for one month, of a thymus gland minced and incorporated with gelatin and taken in two equal parts night and morning.

In a second case, one of lymphadenoma, in a man of sixty-two, in which a fatal issue was anticipated, a dessertspoonful of a mixture of red and yellow marrow, mixed with glycerin and incorporated with

gelatin, was administered thrice daily. The quantity of urine was increased from twelve or fourteen ounces to a quart, and the general condition was appreciably improved.

In regard to the treatment of myxedema by means of products of the thyroid gland, the explanation is offered that the absence of the thyroid secretion entails the development of a condition in which there is an excess of mucin (the normal predecessor of ordinary connective tissue), not only in the subcutaneous tissues, but also in many other connective tissues. The natural inference is that in health the thyroid gland adds something to the blood that controls the growth of mucin.

DIPHTHERIA WITHOUT MEMBRANE.

THERE has long been reason to believe that diphtheria may exist in the absence of membrane-formation. Thus, it is not uncommon in times of epidemic to encounter, in families of which one member has had diphtheria, cases of simple angina, of which the true nature is made evident by the transference to others of virulent diphtheric infection. At times, too, nephritis and the palsy characteristic of diphtheria have been observed in the sequence of an attack of apparently simple catarrhal angina. It has, also, occasionally happened that of two persons who have cleared by suction a tracheotomy-canula used in a case croup, one has developed typical diphtheria, while the other suffered only from an ordinary febrile angina. Of course, it is possible that in all of these various instances membrane has been present, but has disappeared, or is present but situated out of the range of observation. The confirmation of the natural inferences from the circumstantial evidence remained incomplete and inconclusive until the discovery of the bacillus of diphtheria by LOEFFLER, and the demonstration of its etiologic relation.

It has been shown beyond peradventure of doubt that many cases of croup are of diphtheric origin; while in the angina of scalatina, and in most cases of simple and lacunar and follicular angina, as well as in many cases that cannot clinically be distinguished from cases of diphtheria of the pharynx and air-passages and from genuine croup, diphtheria-bacilli cannot be found. The bacillus of diphtheria has but rarely been found in the oral cavity of perfectly healthy individuals, and of persons suffering with catarrhal angina.

FEER (*Corresp.-blatt für Schweizer Aerzte*, Jahrg. xxiii, No. 8, p. 295) has recorded the results of an interesting study that have an important bearing in this connection. His study includes forty cases of bacillary diphtheria, five cases of membranous angina dependent upon the presence of micrococci, and numerous cases of simple and follicular angina. He reports in detail a house-epidemic, in which, in the course of two months, there occurred in the Children's Hospital at Basle, at a time when diphtheria was not especially prevalent in the city, eight cases in which membrane formed in the larynx or pharynx, or in both. In six of these diphtheria-bacilli were found; in the remaining two only micrococci. Of the former, four died; all of the others recovered. In the further course of events, virulent diphtheria-bacilli, in the total absence of deposit, were found upon the tonsils of three children that occupied a room that had previously been occupied by three other children suffering from genuine diphtheria. Two of the children displayed manifestations of febrile catarrhal angina, with enlargement of the cervical glands. One presented neither local nor constitutional manifestations.

These observations indicate that we have yet considerable to learn concerning the clinical recognition of diphtheria, while their practical outcome leads to the treatment of mild and doubtful cases in times of epidemic on the same lines as that of the most virulent.

EDITORIAL COMMENTS.

Leprosy in India.—*The British Medical Journal*, No. 1687, p. 919, presents an abstract of the report prepared by a Commission which spent twelve months in India studying leprosy. It was not found that the disease is more prevalent on the seacoast, in riparian areas, or in large valleys than elsewhere. All tracts are invaded more or less impartially, and, as far as surface-relations are concerned, no generalizations could be made. No relation could be traced between the geologic formation of an area and the density of the leprous population. It is shown not only that leprosy has not increased in British India, but that the figures suggest a decrease. There seemed to be some connection, accidental or otherwise, between the dampness of the climate and the prevalence of leprosy, though not between heat and the distribution of the disease, nor between the increase or decrease or the density of the population and the leper ratios. The disease was especially prevalent where cholera was endemic. There was some evidence that leprosy is most prevalent in the most poverty-stricken districts. Considerable importance is attached to unsanitary surroundings, unfavorable social conditions and the like as etiologic factors, the removal or improvement of which is an important prophylactic measure. The disease was found to affect all ethnic elements, but severally

to a different degree. The native element is most prone and the unmixed European least. The difference is to be ascribed solely to the inequality of social conditions. It was not found that vaccination had the slighest influence upon the prevalence or increase of the disease.

The Commission arrived at the conclusion that leprosy in India cannot be considered an hereditary disease and that the evidence is hardly sufficient to establish to any appreciable degree an hereditary specific predisposition to the disease by the offspring of leprous parents. Leprosy is by the Commission believed to be an infective disease, caused by the bacillus lepræ, but not necessarily contagious. The theory is rejected that mosquitoes and other insects may be responsible for the diffusion of the disease. The same view is held with regard to the eating of fish. The cost of salt is so small that there is no basis for the claim that the disease has been increased by deprivation of salt. The disease was not found sufficiently diffused to warrant a belief in a connection between water and the spread of leprosy. No support was found for the view that leprosy bears any relation to syphilis.

The Commission considers leprosy an incurable disease, although it is admitted that by proper attention to the hygienic surroundings much may be done to ameliorate the condition of the sufferers, and to this end the establishment of voluntary asylums throughout India is recommended. Drugs and oils are but palliative. Any oil thoroughly rubbed into the skin will afford some relief, but a specific action belongs to none. Arsenic is perhaps the most valuable drug at present known for the palliative treatment of the disease. Nerve-stretching may be resorted to as a valuable aid to relieve pain, and excision of tubercles is occasionally followed by temporary good results. In cases of perforating ulcer free incisions down to the bone afford great relief and yield good results. Bronchotomy and ophthalmic operations should be performed as occasion requires; in fact, no treatment sanctioned by the principles and laws of surgery need be refused.

The Horse-leech as a Human Parasite.—It is stated by the *British Medical Journal* that in Southern Europe and in Northern Africa the hemopis, or horse-leech, in an immature condition, inadvertently swallowed with drinking-water, not infrequently attaches itself to the mucous membrane of the naso-pharynx of man, as well as of other animals. Occasionally the parasites attach themselves to the rima glottidis, or even pass into the larynx and upper part of the trachea, giving rise to irritation and discomfort, and also imperilling life. Once firmly established, the horse-leech is rarely expelled spontaneously. If inhalation of tobacco-smoke, saline applications, or administration of turpentine, fail to dislodge the parasite, its removal with the forceps (with the aid of the laryngoscope) should be attempted. The inhalation of chloroform is said sometimes to cause it to abandon its hold; but if in or near the larynx this procedure might prove dangerous, as the parasite might be inspired into the air-passages. Should simpler measures fail, in case the leech be fixed above the glottis or immediately beneath the vocal bands, crico-thyroid laryngotomy may become necessary; and tracheotomy, if the leech be situated at a lower level. For purposes of anesthesia cocaine is to be preferred. When the air-passages have been opened the gentle injection through a catheter of a solution of salt will cause the parasite to relax its grasp. The thyroid cartilage should be slit open only as last resort.

"Brains and Money" in Medical Education.—Our esteemed contemporary, *The Post-Graduate*, says most wisely:

"Medical colleges have for too long had the power to determine who shall and who shall not practise medicine. Like other institutions that have wielded sway uninterruptedly and unquestioned, they have sometimes become careless in their methods. Many of these medical colleges have gone on year after year, giving licenses to practise to men who were almost totally unable to converse and write properly in the English language. And so far as intimate acquaintanceship with medicine as a science was concerned, they were as ignorant of it as a child. The fact that an individual is able to have crammed into him sufficient knowledge to pass a college examination, in no way determines his fitness to assume the study of medicine."

But after thus excellently stating a truth, our contemporary proceeds to sneer ungracefully and untruthfully at the poor young man who "scrapes his way" through college, and more or less plainly implies that poverty is inconsistent with a good quality either of student-character or of the life of the practising physician. We would urge that neither this praised conjunction of "brains and money," nor the scorned correlation of poverty of purse with poverty of medical ability are either necessary or even common correlations. When the medical profession sneers at lack of money in its members, and makes it impossible for poor young men to enter and honor it—then will medicine deservedly be a far less honorable profession than it is to-day.

The Treatment of Disease without Alcohol.—One of the most accomplished, as well as most philosophic and most original, of living physicians is BENJAMIN WARD RICHARDSON. Any expression of opinion or any announcent of practice from his pen must, therefore, be received with the most respectful consideration. He retired from hospital practice in the year 1867, but in the spring of 1892 he received an invitation to become physician to the London Temperance Hospital, which, in his own language, "was so much to my taste, and the mode in which it came to me was so handsomely conceived, that I could not help availing myself of it."[1] Left free to prescribe alcohol medicinally in such cases and at such times as he saw fit, he treated two hundred successive cases, of a wide range of formidable diseases affecting various classes of persons, without the use of alcohol in a single case. Glycerin was employed in the preparation of tinctures, and a series of waters (aqua ferri, aqua chloroformi, aqua opii, etc.) was devised to form the menstrua of other active drugs that might be required. So successful have been the results, that it is concluded that they could not have been bettered by any aid that could have been derived from alcoholic stimulants.

One Method of Launching a New Medical Magazine is as follows: Print a facsimile of the cover as it is desired to be, several months in advance, putting on it as collab-

[1] The Asclepiad, First Quarter, 1893, No. 37, vol. x, p. 1.

orators the names of twenty or thirty of the greatest surgeons, gynecologists, and obstetricians in America and England. Then write a letter to each of the "collaborators," as follows:

"Some time ago I begun (*sic !*) the formation of a staff of representative American surgeons and gynecologists with reference to beginning the publication of a high class journal as per (*sic !*) enclosed cover page. I wrote you for your coöperation in the work, but for some cause have not yet received your reply. However, being anxious to get out a limited number of copies of the cover to send to the advertisers, I allowed your name to remain," etc.

A large proportion of those thus invited never received the mythical first letter, because it was never sent. Some "finding themselves in such good company," consented to let their names remain; others saw through the trick and refused to become "collaborators." The journal will doubtless succeed!

The New York State Reformatory.—We last year urged our readers to note the work of the New York State Reformatory, an institution which has become the model of its kind throughout the civilized world. The seventeenth *Year-book* has just been issued, and we wish to renew our note of praise and satisfaction in reading the record of work done. If the purest delight possible is that of practical success in the reformation, physical, mental, and moral, of those who have unfortunately got a wrong start in life, then must the officers of the Reformatory be happy men, and while this noble pride speaks from every page of the book—beautiful artistically as well as ethically—one can plainly see that not sentiment alone, but a strict gauging of the limits and uses of sentiment is as evident everywhere. There is seldom more interesting reading offered the psychologist, moralist, and physician than the biographies, with portraits, of one hundred of the young men. "Reformation must be the great object of penal legislation, both as a matter of prudence and a matter of justice, as a necessity and a debt, for the protection of society and the satisfaction of the rights of the individual."

The "School of Anesthesia, with Annex."—An illustration of the strange uses of language, as well as illustrations of several other interesting things, is given in a circular before us, emanating from Chicago. A considerable Faculty is listed of a proposed "School of Anesthesia," with the titles of M.D., A.M., D.D.S., and M.S.A., but, strange to say, no D.D.'s or LL.D.'s appear there. "Anesthesia" is repeatedly defined as hypnotism, but some little place is left for the kind of anesthesia physicians and dentists have usually in mind in their use of the word. It is even conceded that there is an "importance in using both the internal hypnotic, or mind, with the external hypnotic, or narcotic, in coöperation in producing hypnotism." "M.S.A." is the new degree conferred, for which the fee is $100, and, in writing, one may address either the secretary of the school or a certain "Dental and Surgical M'f'g Co." The "annex" relates to instruction in prosthetic dentistry.

The Spelling of "Symphysiotomy."—A learned and courteous critic, contending with valor and right that we should guard the well-spring of medical English undefiled, timorously suggested that *symphyseotomy* is the proper way of spelling the word. In the phraseology of the suggestion there was no shade of hauteur or contempt for others who, groping in dense ignorance, dared to spell the word *symphysiotomy*. Reference to an unimpeachable authority was made against the plebeians and philologic barbarians. With genuine learning and true courtesy the authority appealed to denies the validity of the logic of the *symphyseotomist*—a logic that it might have been remarked would necessitate a radical change in the spelling of a thousand or more accepted medical words. We judge that the barbarians may still write *symphysiotomy*, if they desire, and that *tracheology* and *tracheologist* are formations also little creditable to philologic umpires.

Dr. Tryon, Surgeon-General of the Navy.—The appointment of Dr. Tryon as the successor of Surgeon-General Brown, who went on the retired list May 10th, was made over the heads of several worthy officers who were his seniors. Dr. Tryon's long, varied, and excellent services in the Navy for over thirty years, and his characteristic energy and executive ability, all give ground for the assurance that this department of the public service will soon be advanced to the position of usefulness and effectiveness that it should hold. It may be made a great helper in the cause of general medicine and science, and those acquainted with the new chief assure us of his fitness and determination to realize the needed reorganization.

A Daily Medical Journal, so says the *National Medical Review*, is published in Washington, D. C., and is called the *Washington Post*. It is supposed to be a common newspaper, but the proportion of space devoted to advertisements of sure cures for gonorrhea, "small and weak organs enlarged," pennyroyal and tansy pills, cures of "errors and indiscretions of youth," etc., leads our contemporary to class the *Post* as "medical."

Smallpox Epidemic at Antwerp.—The Treasury Department has been informed through the Marine-Hospital Service that smallpox is epidemic at Antwerp. Such an event is in the highest degree culpable, if not criminal, for of all preventable diseases smallpox is probably the most certainly preventable.

SELECTIONS.

THE PRACTICE OF MIDWIFERY IN NEW YORK.

MANY of our readers, even those living in New York, will no doubt be surprised to learn that the practice of midwifery in this State is free to any person, male or female, who will take the trouble to have his or her name registered, and pay a fee of fifty cents. A physician cannot prescribe for a baby with colic, and a pharmacist cannot put up the prescription, unless the one has given satisfactory proof of his fitness to treat disease, and the other to compound medicines. But the perilous passage

of the infant from its mother's womb to the outside world, perilous alike to the mother and to the child, may be intrusted to the guidance of any old crone or ignorant beldam who thinks she can make a better living in this manner than by scrubbing floors or selling apples on the street corner. When we read that nearly one-half of the registered births in this city are reported by midwives, we need no longer be surprised that over 3400 children were stillborn in the year 1891. The wonder is, rather, that there were not 20,000 stillbirths, and we can but admire the midwives for their forbearance in abstaining from meddlesome interference with the beneficent processes of nature.—*The Medical Record.*

STATISTICS OF THE WORK OF THE NEW YORK CITY DISPENSARIES.

	No. of cases reported by dispensaries.	Per cent. of deductions.	Approximate number of individuals.
Supported by the United States:			
Marine Hospital	3,310	15	2,810
Supported by the Municipality:			
Bellevue Dispensary	44,554	35	28,965
Gouverneur Dispensary	25,252	35	16,418
Total	69,806		45,383
Corporate Institutions—independent and general:			
Good Samaritan	95,233	35	61,918
New York	46,482	30	32,538
Vanderbilt Clinic	35,657	25	26,737
DeMilt	30,111	30	21,081
Northwestern	29,963	30	20,975
Northeastern	21,694	30	15,190
Northern	15,549	35	10,899
German Poliklinic	13,491	20	10,793
East Side	10,500	20	8,400
Beth Israel	7,500	30	5,250
Harlem	6,509	20	5,209
West Side, German	3,250	15	2,770
Six of a smaller class	5,148	10	4,638
Total	321,087		226,398
Connected with Hospitals—general:			
Mt. Sinai	31,185	20	24,945
Roosevelt	24,966	20	19,972
New York (with Chambers Street)	19,382	20	15,504
Presbyterian	9,349	15	7,954
Manhattan (Harlem)	2,709	10	2,439
Church	2,000	10	1,800
French	1,808	10	1,628
St. Vincent	674	5	641
Total	92,073		74,883
Eye, Ear, and Throat:			
N.Y. Eye and Ear Infirmary	21,706	10	19,536
Manhattan	14,123	10	12,711
Ophthalmic	13,722	10	12,350
Ophthalmic and Aural	9,003	10	8,103
New Amsterdam	2,025	5	1,924
Harlem	1,540	5	1,465
Metropolitan	1,202	5	1,140
Total	63,321		57,229
Women and Children:			
N. Y. Infirmary for Women and Children	8,425	15	7,165
St. Mary's	2,897	5	2,752
N. Y. Med. Coll. and Hosp. for Women	1,855	5	1,762
Woman's	1,427	5	1,356
St. Andrew's	831	5	790
Babies'	240	...	240
Total	15,675		14,065
Orthopedic:			
Ruptured and Crippled	8,855	5	8,410
Orthopedic	2,197	...	2,197
Total	11,052		10,607
Skin and Cancer:			
New York Skin and Cancer	1,785	10	1,607
Miscellaneous:			
Two Institutions	1,252	5	1,190
Connected with Colleges:			
Post-Graduate	15,832	20	12,662
New York Polyclinic	12,000	25	9,000
University	10,000	25	7,500
Eclectic	4,502	15	3,827
New York Homeopathic	2,500	10	2,250
Total	44,834		35,239
Connected with Churches:			
Trinity	3,291	10	2,962
St. Barnabas Mission	1,000	10	900
Total	4,291		3,862
Grand totals	628,486		472,429
Deduction on account of "rounding"			20,000
Grand totals	628,486		452,429

—*New York Evening Post.*

REVIEWS.

A Manual of Practical Medical and Physiological Chemistry. By Charles E. Pellew, E.M., Demonstrator of Physics and Chemistry in the College of Physicians and Surgeons, N. Y., etc. Pp. 314. New York: D. Appleton & Co., 1892.

This Manual is not destined to supplant any of the larger standard text-books on chemistry, to which reference must be made if a more elaborate presentation of medico-chemical methods be desired. Its aim is distinct, and essentially a practical one, namely, the elimination of that which is purely chemical and the grouping of those processes that are eminently medical or physiologic in their application; in other words, it treats of the science of chemistry as pertaining to medicine alone. It is especially adapted to the use of students, for whom it was originally intended, and has evidently been prepared with care. Blank pages have been inserted at convenient intervals, and plates, many of them colored, embellish the work. Special notice should be made of the clinical tests for breast-milk on pages 181 and 185, an important subject that has been largely overlooked in books of this nature, and also of

the tests for gastric juice (pages 220 to 223) which, including those of more recent date, are given in full. We notice that the older mode of spelling—for instance, hæmorrhage and œsophagus—has been retained, and we regret that the smallness of the type should mar, as it certainly does, the usefulness of a book that otherwise is of evident merit.

TRANSACTIONS OF THE COLORADO STATE MEDICAL SOCIETY. Twenty-second Annual Convention, Denver, June, 1892. Pp. 391. Denver: H. T. Collins, 1892.

THIS interesting volume contains some forty papers upon a wide range of subjects, representing general medicine and surgery, as well as almost all of the special departments. It is especially encouraging to note the attention that is paid to the subject of sanitation. Some of the papers are quite noteworthy, and reflect much credit upon the Society from which they emanate. Limitations of space permit merely the mention of a few.

The address by the President, Dr. Stricker, deals with the consideration of "Fibrosis in the Arrest of Phthisis." "Linear Craniotomy in Microcephalus, with a Report of Two Cases," is the title of a paper by Dr. Parkhill. Dr. McNaught details a study of "Plastic Bronchitis." In a paper on "The Identity of Typhoid Fever and the Severer Forms of Mountain Fever," Dr. Campbell expresses the opinion that mountain fever is not a specific affection, but is usually enteric fever or malarial fever. Dr. Pershing reports a case and discusses "Epileptic Automatism of Speech and Action." Dr. Eskridge makes a notable contribution to the subject of "Retro-anterograde Amnesia, with a Report of Two Cases." Dr. John M. Keating contributes a paper entitled "Some Practical Points in the Therapeutics of the Diseases of Women."

THE RETROSPECT OF MEDICINE. A HALF-YEARLY JOURNAL. Edited by JAMES BRAITHWAITE, M.D. Lond. Vol. CVI. July–December, 1892. London: Simpkin, Marshall, Hamilton, Kent & Co., Limited.

WITH this volume, Braithwaite's *Retrospect* completes its fifty-third year of medical usefulness. As in former numbers, a careful selection has been made from the immense mass of the world's medical literature for the closing months of 1892, and while many truly valuable contributions have been necessarily either entirely omitted or extremely curtailed, that which has found entrance is of sterling worth. The editor deserves commendation for the able manner in which he has discharged the onerous duties imposed upon him. Every department of the medical sciences has been allotted space, and no effort have been omitted to maintain the high standard of the journal and the enviable position which it enjoys in the estimation of the medical profession at home and abroad.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA. Thirty-ninth Annual Session, held at Wilmington, N. C. Wilmington, N. C.: Jackson & Bell, 1892.

THIS volume is the record of a most successful meeting of the society from which it emanates. In addition to the President's Address and a partial synopsis of the report of the Secretary of the State Board of Health, the late Dr. Thomas F. Wood, it contains some sixteen or seventeen papers of varying merit and interest, including reports in the different departments of medicine and surgery, besides other information of interest to those more directly concerned. The Society demonstrates its dignity by the expulsion of a member for advertising and administering a nostrum in the treatment of alcoholism.

THE YEAR-BOOK OF TREATMENT FOR 1893 (Lea Brothers & Co., Philadelphia) easily holds its advanced place among the many annuals and abstracts forming so marked a feature of modern medical literature. Its 488 pages give a critical and well-arranged review of the best that the year has brought forth in all departments of therapeutics. Among so much that is excellent one can scarcely choose, yet a word of special praise must be said for Mitchell Bruce's article on the Heart and Circulation, and for that of A. E. Garrod on Gout and Rheumatism. Commendable features are the "Summary of Therapeutics of 1891–92," by W. G. Smith, and the selected list of new books. There is, as usual, a good index.

SOCIETY PROCEEDINGS.

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Forty-third Annual Session, held at Williamsport, May 16, 17, and 18, 1893.

FIRST DAY—MAY 16TH.

THE proceedings were opened with prayer. "Addresses of Welcome" were delivered by MAYOR ELLIOT and DR. H. G. MCCORMICK.

The Committee on Contagious Ophthalmia reported progress and emphasized the need of action to prevent the spread of the disease. It was agreed that galley-proofs of the papers read before the Society should be sent to certain journals selected by the Committee on Publication.

An amendment to the rules requiring the arrangement of papers on the program so as to group kindred subjects on each day was offered and laid over for one year.

The amendment offered last year, providing for a Committee on Scientific Business to aid the Committee of Arrangement in providing for scientific papers and discussions, was adopted.

At the afternoon session, DR. S. W. LATTA, of Philadelphia, read the "ADDRESS IN MEDICINE." He expressed the belief that no man should engage in a specialty until he had spent ten years in general practice. He would thus become self-reliant, thoughtful, charitable, and careful of the feelings of others. Otherwise he is likely to be narrow in his views. The tendency among young men to at once enter upon a specialty, without the experience to be obtained by general practice, was deplored. Under these circumstances the specialist is too often compelled to relegate his patient to a general practitioner to determine the nature of his ailment. The physician should study drugs and their uses. He should dispense his own remedies, so that he may know what is given. He is too often ignorant of the laws of hygiene.

It is indispensable that he should be familiar with plumbing, the disposal of garbage, water-supply and its contaminations, and disinfection. The duty of the physician is not only to cure, but also to prevent disease.

The views enunciated were indorsed by DR. J. L. ZIEGLER, of Mount Joy, and DR. J. M. BATTEN, of Pittsburg, who, however, did not assent to the dispensing of drugs.

DR. A. KOENIG, of Pittsburg, also objected to the physician dispensing drugs, unless in the country.

DR. W. S. FOSTER, of Pittsburg, admitted the wisdom of the physician supplying the drugs prescribed, as smaller quantities could be dispensed and changes made as often as required.

In closing the discussion, DR. LATTA stated that forty well-selected articles of the materia medica would answer for quite every emergency.

Upon motion of DR. W. M. WEIDMAN, of Reading, the courtesies of the meeting were extended to the physicians of Williamsport.

DR. EDWARD JACKSON read a paper entitled "When Cataract is Ready for Operation," in the course of which he pointed out that there are two kinds of maturity to be recognized with reference to cataract. The one, visual maturity, is reached when the interference with vision is sufficient to demand operation; and the other, surgical maturity, occurs when the physical condition of the lens is such as to be most favorable for its removal. In former times, the extraction of cataract was attended with such serious danger of complete loss of the eye that the question of surgical maturity was a most important one, the operation only being justified when it offered the greatest possible chance of success. With improvement in surgical methods, including the avoidance of septic panophthalmitis, the chances of a satisfactory result from operation have been greatly increased, while new procedures have enabled the surgeon to render cataracts surgically mature, or to extract successfully those that are still immature. These changes make it possible to perform the operation at an earlier date, and thus avoid a long period of comparative blindness, entailing idleness and dependence and reacting unfavorably on the patient's health.

In the treatment of cataract in young persons, the value of the power of accommodation must be considered; but if the opacity is complete, or sufficient to demand an operation, then the earlier it is resorted to the better, as at an early age the removal of the lens may be accomplished after simple discission, and the more promptly the younger the patient.

In all cases of operation for cataract, an extremely important factor is the condition of the patient's general health, because this will exert a profound influence on the process of healing.

DR. G. B. MASSEY, of Philadelphia, read a paper entitled "Prevalent Errors in the Treatment of Diseases of Women," in which he considered the current errors of gynecologists and the erroneous views of gynecology held by general practitioners. He maintained that the pelvis of woman is not the exclusive domain of the major surgeon. The vaginæ of young girls are torn by the introduction of specula; the cervix is wounded by tenacula; the uterus is dragged down for mere examination; the sound is hastily passed into the uterus; and fierce efforts to elicit pain or detect growths are made by bimanual examination. The finger is better for many purposes, and more intelligent. Displacement is diagnosticated, and some agent is employed to keep the uterus in place. Torture is the result when there is fixation, and often the true plan is to relieve an enlarged uterus. For menorrhalgia dilatation is practised when there is no obstruction, but ovarian congestion, lack of development, etc. A safe and sure remedy is the galvanic current. Again, it is often assumed that lacerations cause the suffering that occurs, when the repair often fails to benefit. Slight lacerations are not incompatible with health, and deep ones, without metritis, only demonstrate their presence by miscarriages.

Many gynecologists still advise dangerous operations to remove benign fibroids, when electricity is the best remedy. The removal of ovaries to arrest the growth of fibroids is unwarranted. The method of Apostoli is more successful. Electricity is not, as deemed by some gynecologists, a cure-all for troubles in women, nor at all useful in the hands of an unskilled operator. General practitioners treat diseases of women more actively than the specialist.

DR. E. E. MONTGOMERY, of Philadelphia, stated that he had never seen a case in which electricity had reduced the size of a fibroid of the uterus, although the application seemed to have a temporary effect on the growth. Patients are rarely able to continue treatment for a year or more; hence to obtain permanent results operation is necessary.

DR. H. A. HARE, of Philadelphia, said that if electricity is capable of removing growths in one part of the body one should expect it to remove them in other parts, but such results are not encountered in the nose, throat, etc.

DR. S. S. TOWLER, of Butler, stated that he has known of the removal of tumors by electricity in a number of cases in which the diagnosis had been made by experts.

DR. T. J. MAYS, of Philadelphia, read a paper entitled "Rest in the Treatment of Pulmonary Consumption." He pointed out that in tuberculosis there was wasting of the whole body. The strength is easily exhausted and energy is not properly distributed. According to his view, the trouble is in the nervous system. The individual is spending too much. The remedy is to check the waste and to build up the body. More air and more food will be required, and exhausting efforts must be interdicted. The therapeutic agent of first importance is rest. The second is food in a concentrated form. After decided improvement there is often relapse, by reason of increased activity.

DR. H. G. MCCORMICK, Chairman of the Committee on Legislation, reported the passage of a law by which none can enter the profession of medicine in Pennsylvania, after July, 1894, unless he has received a common school education, a medical diploma, and has been granted a license by the Medical Council of Pennsylvania, after an examination by the State Board of Medical Examiners. He must have attended three courses of lectures in three different years. After July, 1895, he must have attended four courses. Few, if any, States have a better law, and the public and the profession are to be congratulated.

A vote of thanks was tendered to the Honorable H.

K. Boyer, Charles A. Porter, F. M. Riter, and J. B. Showalter; and to the Committee, which was continued until the bill has been signed by the Governor.

On motion of DR. MONTGOMERY, the report was adopted and the expenses of the Committee ordered to be paid.

DR. W. M. WEIDMAN, of Reading, presented the report of the Committee on Rush Monument. The collections for the year had been $189, making a total of $1356. The Committee was continued.

SECOND DAY, MAY 17TH.

The Nominating Committee presented the following names as the officers for 1894, for whom the Secretary was, on motion, instructed to cast a ballot: President, Dr. H. G. McCormick, of Williamsport; Vice-Presidents, Dr. A. Koenig, of Pittsburg, Dr. S. W. Latta, of Philadelphia, Dr. J. K. Robins, of Columbia, and Dr. S. S. Towler, of Butler; Permanent Secretary, Dr. William B. Atkinson, of Philadelphia; Treasurer, Dr. G. B. Dunmire, of Philadelphia; Assistant Secretary, Dr. Hildegarde H. Longsdorff, of Cumberland; to fill vacancies by expiration of term in the Judicial Council, Drs. M. A. Rhoads, of Berks County, J. H. Packard, of Philadelphia, and John Curwen, of Warren; Chairman of Committee of Arrangements, Dr. E. E. Montgomery, of Philadelphia.

The next meeting is to be held at Gettysburg.

DR. J. W. PARK, of Harrisburg, read the "Address in Laryngology." He urged physical voice-training in the public schools, and dwelt upon the importance of employing the correct method. Instruction should be begun early. Children should early be taught to articulate properly. The pharynx is often injured by want of training. Efforts should be directed to securing the proper pitch. The exercise should never be permitted to induce fatigue. Each child must be decided for separately.

DR. J. M. BALDY, of Philadelphia, read a paper on "Carcinoma," in which he urged the importance of early diagnosis. The only hope in treatment resides in early removal, while the disease is local. Then the patient may recover completely.

Some members maintained that constitutional measures alone sufficed, *e. g.*, Dr. C. R. Earley and Dr. Ridgway, who insisted that arsenic and hemlock had often accomplished a cure, even after an operation had failed.

DR. BALDY, in reply, maintained that the disease was originally local. It is too often not recognized till the time for help has passed.

DR. J. V. SHOEMAKER, of Philadelphia, exhibited a number of new remedies for skin-diseases.

DR. S. AYRES, of Pittsburg, in a paper on "Movable Kidney," stated that the symptoms, general nervousness, cardiac palpitation, inability to sleep on the left side should lead to a thorough examination, as under certain conditions great danger might be liable to result from the presence of a movable kidney.

DR. G. NUTT, of Williamsport, described the operation of intubation in the course of diphtheria, croup, etc., and detailed cases and results.

On motion of DR. P. A. HARTMANN, of Harrisburg, it was resolved that this Society respectfully urges upon the Legislature the importance of enacting a law to prevent the pollution of the streams and inland waters used as sources of domestic water-supply in this State; and that copies of this resolution be sent to the President of the Senate and the Speaker of the House.

In the afternoon DR. S. G. DIXON, of Philadelphia, read the "Address in Hygiene," in which he urged general care, pure air, the need of parks, wide streets, etc., and cleanliness in everything.

DR. M. PRICE, Philadelphia, detailed a case of extra-uterine pregnancy in which operation was performed, with the result of saving mother and child.

DR. J. TYSON read a paper, pointing out that cases are often seen in which the symptoms appear to be those of heart-disease or of kidney-disease, when the reverse condition is present.

DR. J. B. ROBERTS, of Philadelphia, spoke on "Simplicity in the Treatment of Fractures."

DR. H. A. WILSON, of Philadelphia, read a paper on "Suture of the Tendo Achillis," etc., illustrating his remarks in a forcible manner.

DR. W. HOLLOPETER, of Philadelphia, considered the treatment of scarlet fever, including careful bathing, inunction with carbolized oil, etc,

DR. I. N. KERLIN, of Elwyn, reported for the Committee on Provision for Imbecile and Feeble-Minded Children. It is hoped that an appropriation of $250,000 will be made for a building and grounds, etc., in the western part of the State.

The subject of change in, or abolition of, the Code was introduced by DR. J. B. MURDOCH, of Pittsburg. It was, on motion, resolved that this Society opposes any such action, and the delegates were instructed to vote against it.

(To be concluded.)

AMERICAN GYNECOLOGICAL SOCIETY.

Eighteenth Annual Meeting, held at the College of Physicians, Philadelphia, May 16, 17, 18, 1893.

FIRST DAY, MAY 16TH—MORNING SESSION.

DR. W. H. BAKER, of Boston, read a paper on "Congenital Dilatation of the Urethra," in which he detailed several cases. He pointed out the importance of a correct diagnosis. The size of the urethra is usually sufficient to admit the forefinger. In addition there is commonly mal-development of the vagina, which is usually shorter than normal. In one case there had been for ten years partial incontinence of urine. The sphincter was under control while the patient was seated, but not when walking. There was an absence of any burning sensation. The meatus urinarius was abnormally distended, and the mucous membrane of the urethra protruded through it. The mucous membrane of urethra and vagina was extremely thin. It was impossible to tell where the urethra began and the bladder left off. There was no sphincter. An attempt was made to reduce the meatus to a more natural size and to lengthen the urethra. The woman was much better for a time, and it seemed as though a second operation would not be necessary. She still lost a few drops of urine when standing, and faradism was applied one and a half inches from the meatus twice a week for one month, with the hope of strengthening and toning the urethra; but there was but little improvement from this.

Finally an operation was performed for narrowing the urethra; since then the woman has had perfect control over her urine.

DR. PAUL F. MUNDÉ, of New York, read a paper entitled "Abdominal Fistula after Celiotomy; Its Prevention and Treatment." He stated that after the abdomen has been opened, it closes, as a rule, without the development of a fistula. In a large number of cases, however, after apparent union there occurs a discharge of pus; and on examination there is found to be an undermining of the skin. Such an event may occur even when every antiseptic precaution has been taken. Sometimes the fistula will be found to extend deeply into the abdomen, in consequence of the infectious character of the wound, the abdominal cavity at the time of operation being bathed in pus, some of which is left in spite of the greatest care in washing it out. Retained ligatures also sometimes constitute a cause of fistula; after their withdrawal the sinus closes. A few cases are on record in which pieces of gauze, sponges, and instruments have been inadvertently left in the abdominal cavity. Abnormal communications between the abdominal cavity and the vagina are likely to be formed after the removal of the fibroid uterus and the attachment of the cervix to the lower part of the wound; this is one of the objections to the extra-peritoneal method, as sloughing is a necessary consequence.

The measures on which the prevention of these fistulæ is to be based, include absolute antisepsis, the use of animal ligatures, and entire closing of the wound.

The prognosis depends upon the duration of the fistula and the health of the patient. A recent fistula, in a person of fair health, disposes to close spontaneously; whereas an old one, in a broken-down person, persists. Those that manifest a tendency to healthy granulations present the best chances for recovery. Nature occasionally shows a tendency to heal by drainage into the vagina, urethra, or rectum.

The treatment is, first, to remove the cause; if there is any foreign substance in the wound it should be removed. To have the wound heal from the bottom up, it is necessary to scrape it, to irrigate it with a mercurial solution, and to pack it daily. If necessary, balsam of Peru or tincture of calendula (one in four) may be applied daily, to stimulate granulation; a probe at red-heat may also be passed deeply into the canal. When the sinus persists, and extends deeply into the pelvis, so that a probe can be felt in the vagina, an opening may be made and a sufficiently long drainage-tube passed. Daily irrigation with Thiersch's solution should be practised. The tube is retained in place by packing the vagina with iodoform-gauze, which should be changed once or twice a week; in a week or ten days the catgut is absorbed and the upper part of the sinus is closed. The drainage-tube should then be gradually withdrawn, and drainage is obtained without interference with the granulations.

An accident that may occur is the rupture of the wall of the bladder by the withdrawal of the drainage-tube, as a result of the adhesions and the friability of the bladder-wall. In such a case a rubber catheter should be introduced into the bladder.

When the sinus has ramified in several directions, it is not worth while to close one and not the others. One may cut down and treat the wound as an open one; but the operation is attended with danger of wounding the pelvic viscera. As a last expedient, in cases in which the fistula persists, celiotomy may be performed.

DR. GOODELL stated that in his experience fistulæ rarely occurred in simple ovariotomies, but almost always in septic cases. The cases were fewer since he has been using the absorbable ligature. It is wise to remove the whole of a pus-tube. The idea of gradually withdrawing the drainage-tube is admirable. It has been Dr. Goodell's practice to introduce the drainage-tube in the vagina, but not to withdraw it gradually. According to his experience these sinuses occur generally when a drainage-tube is used, and more especially in fat women. They have resulted when a not thoroughly aseptic gut suture has been employed.

DR. NOBLE expressed the opinion that the sinus is not so much the result of the ligature as that some diseased tissue is left. Since adopting the method of removing all diseased tissue, he has had no trouble. He does not believe that it makes much difference which ligature is used.

DR. CURRIER, of New York, expressed the belief that one of the chief causes of fistulæ is the drainage-tube, especially if this be a hard one. The curette, if used at all, should be used gently, or injury of the intestines may result. The use of astringent applications is followed by little benefit, except in those cases in which healing would probably take place spontaneously; but if the fistulæ are sinuous, all of the parts are not touched and the application may do harm by causing granulations to form in front and leaving the lower part of the sinus open. Through drainage is valuable.

DR. DUDLEY stated that fistulæ follow one of three conditions: the presence of pus in the abdomen, not entirely removed at the time of the operation; the use of the drainage-tube; or the infection of the ligature. He always uses the animal ligature, and does not think that there should be a second abdominal section.

DR. EDEBOHLS said that one of the conditions following celiotomy that may cause a fistula is tuberculosis, in consequence of which the intestine may also be perforated and a fecal fistula be established, which may persist for a long time.

DR. CLEVELAND related that he had observed fistulæ due to ligatures, probably as a result of infection before or after the operation. Through-drainage is the best method of treatment. When pus is present the application of hydrogen dioxid has proved useful.

DR. MUNDÉ expressed wonder, not that sinuses occur, but that there are not more of them, especially in cases in which fibroids are enucleated without being seen, and raw surfaces are left.

DR. B. F. BAER, of Philadelphia, read a "Further Report upon Supra-vaginal Hysterectomy by the New Method." He related that he had operated on 18 additional cases since his report of last year, with 1 death. There had been 1 death among the 10 cases first reported, making, thus, 2 in 28; neither was due to the treatment of the pedicle, so that it may be claimed that the mortality was *nil*. The operation is superior to any other for the removal of fibroid tumors of the uterus.

Of all operations supra-vaginal hysterectomy is the least likely to require drainage. Drainage in abdominal

surgery is a delusion. Dr. Baer stated that in 126 cases he had not used the drainage-tube in more than 2 per cent. In one case death took place thirty hours after the operation, from suppression of urine. At the post-mortem examination the kidneys were found greatly enlarged, and the case should not have been operated on at all. Recently, in two cases of senile atrophy, the uterus became carcinomatous. Dr. Baer expressed his conviction of the utility of early operation for uterine fibroids.

DR. GROFF read a paper "On the Development of Operations for the Removal of Fibroids."

DR. CURRIER, of New York, read a paper on "The Treatment of Septicemia with Oxygen."

He defined septicemia as a "toxic, acute mycosis of the blood." When the blood is in a normal state it does not tolerate microörganisms. These organisms have been found in the milk, and it would seem that they enter the blood through the uterus and are secreted in that fluid. The bacterium coli commune has also been found, so that it is possible that septicemia may result from the absorption of material from the intestines. Toxic substances may be derived from decomposing material in the uterus. Germs may be introduced by means of instruments used during an operation.

The symptoms that especially mark the presence of septicemia are referable to the nervous system.

In treatment the natural forces should be sustained by an abundance of concentrated food (milk is, perhaps, the best) and alcohol.

In giving inhalations of oxygen high pressures should not be used, as they have a destructive influence upon the elements of the blood. The amount of pressure necessary must be determined in each case—dark-colored blood and shortness of breath indicating deficiency in oxygen. It cannot be demonstrated that oxygen has any germicidal effect in the blood, but it stimulates to deeper respirations; the extremities and perhaps the entire body become warmer; there is increased tension of the pulse; there is more natural color of the surface of the body, and a stimulation of the blood-current and the respiration are of great importance in the elimination of the toxic elements.

If the inhalation of oxygen is begun before the nervous centers are paralyzed much benefit may be expected. The only ill effect that has been observed is pain in the region of the stomach, probably caused by swallowing some of the oxygen under too great pressure.

DR. MUNDÉ stated that it has been his experience that after the cause of septicemia has been removed it is simply a question as to which will last the longer, the disease or the patient. So far as therapeutic resources are concerned, there is practically little to do but to aid the constitution and try to keep the patient alive. It seems that oxygen is simply an adjuvant to this end.

On the second day the following officers were elected: President, Wm. T. Lusk, of New York; Vice-Presidents, Samuel C. Busey, of Washington, and Bache Emmet, of New York; Treasurer, Matthew D. Mann, of Buffalo; Members of the Council, B. F. Baer, of Philadelphia; James R. Chadwick, of Boston; Clement Cleveland, of Boston, and Edward Reynolds, of Boston.

The next meeting is to be held at Washington, in the last week of May, 1894.

(*To be concluded.*)

NEWS ITEMS.

The American Climatological Association will hold its Tenth Annual Meeting in the Hall of the College of Physicians, Philadelphia, May 25, 26, and 27, 1893. The following papers have been promised: "Cardiac Dyspnea," by Dr. A. L. Loomis, New York. "Respiratory Mechanism of Wounds in the Chest," by Dr. Andrew H. Smith, New York. "Traumatisms and Chronic Inflammations of the Chest as Causes of Angina Pectoris," by Dr. R. G. Curtin, Philadelphia. "Phlegmonous Angina," by Dr. J. W. Brannan, New York. "A Comparison of the Winter Health-Resorts in the Alps with some places in the Rocky Mountains of Colorado," by Dr. Karl Ruedi, Denver. "A Note on the Relative Values of Therapeutic Methods in Phthisis Pulmonalis," by Dr. G. R. Butler, Brooklyn. "Seasonal Influences in Erysipelas, with Statistics," by Dr. J. M. Anders, Philadelphia. "Health Conditions at St. Augustine," by Dr. F. Fremont Smith, St. Augustine. "Rest in the Treatment of Pulmonary Consumption," by Dr. Thos. J. Mays, Philadelphia. "Report on Results of Treatment at the Adirondack Cottage Sanitarium," by Dr. I. H. Hance, Saranac Lake. "A Contribution to the Treatment of Pulmonary Tuberculosis by Koch's Method. A Supplementary Report of Twenty-five Cases treated Two Years Ago," by Dr. Carl von Ruck, Asheville. "Public Quarantine against Cholera," by Dr. E.O. Shakspeare, Philadelphia. "Recent Agencies in the Treatment of Cholera," by Dr. Judson Daland. Papers have also been promised, but the subjects are not as yet announced, by several, including: Drs. Harrison Allen, J. P. Crozer Griffith, Chas. K. Mills, S. D. Risley, and Edward W. Wattson, of Philadelphia.

The American Laryngological Association will hold its Fifteenth Annual Congress at New York, May 22, 23, and 24, 1893. An interesting program has been arranged. The profession is cordially invited to attend.

Correction.—In the sixth line of the third paragraph of Dr. Gaston's letter in THE NEWS of May 6th, p. 502, the words "those vaccinated" should have read "the non-vaccinated."

Dr. Charles Carroll Lee, President of the Medical Society of the County of New York, died May 10th, in New York City.

Dr. Carl Seiler has resigned the position of Chief of the Nose, Throat, and Ear Service in the Union Mission Hospital.

Kundrat, Professor of Pathologic Anatomy in the University of Vienna, died April 25th, aged forty-eight years.

BOOKS AND PAMPHLETS RECEIVED.

Homeopathy and its Congeners. By G. Frank Lydston, M.D. Pamphlet. Chicago: Fred. Klein & Co., Publishers.

A Consideration of the Knee-jerk Symptom. By R. M. Phelps, A.M., M.D. Reprinted from the Northwestern Lancet, 1892.

Phthisis Bulbi and Artificial Eyes. By William Oliver Moore, M.D. Reprinted from International Clinics, 1892.

Hemianopsia or Hemianopia. By William Oliver Moore, M.D. Reprinted from International Clinics, vol. iii, 2d series.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

A SERIES OF INTERESTING CASES OF INFLAMMATION ABOUT THE CAPUT COLI.

BY G. FRANK LYDSTON, M.D.,
OF CHICAGO, ILL.,
PROFESSOR OF THE SURGICAL DISEASES OF THE GENITO-URINARY SYSTEM AND SYPHILOLOGY IN THE COLLEGE OF PHYSICIANS AND SURGEONS; SURGEON TO THE COOK COUNTY HOSPITAL.

THE importance of inflammation about the caput coli was first recognized by American physicians and surgeons, and to their efforts we owe practically all of our accurate knowledge of this condition. So thoroughly and exhaustively has the subject been discussed in American medical literature that there would seem to be little more to add. We have, however, become so enthusiastic over the surgical aspects of appendicitis that clinical reports are of especial value as showing, on the one hand, cases in which operation is urgently necessary, and upon the other, those that recover without operative interference. My experience with what my friend, Dr. W. S. Christopher, is pleased to term "right iliac disease," while perhaps not so large as that of many others, has afforded me some very interesting cases for study. A recital of a series of some of the more interesting of my cases may be of interest.

CASE I.—Seen in consultation. A young lad, seventeen years of age, was seized with a chill and pain in the right iliac fossa three weeks before I saw him in consultation. He had previously been healthy, and gave no history of injury, of digestive or of bowel trouble. His physician informed me that at no time had there been a temperature higher than 101°. The pain had practically subsided at least a week before I saw him; the temperature had fallen and had not been higher than 100° for several days. On examination distinct induration was found in the right iliac region corresponding to the caput coli and involving an area nearly as large as the palm of the hand. Near the center of this area distinct fluctuation could be detected. Operation was suggested, but refused, and, in order to demonstrate to the physician and to the patient the necessity for operation, I aspirated the tumor with a hypodermatic syringe, withdrawing a fetid, sero-purulent fluid containing numerous fine flocculi of lymph. The tumor was not particularly tender on pressure. In spite of the ocular demonstration of the presence of pus, the patient still refused operation. Being curious to learn the result of conservatism in this case, I kept it under observation until complete recovery occurred, and I found that the conservatism of the patient and his friends had resulted in a complete cure. The young man told his physician a few days after I examined him that he had had a sudden and copious discharge of "matter" from the bowels, attended with a sense of something giving way in the abdomen.

CASE II.—A little girl, nine years of age, was brought to me by her aunt, a very intelligent woman. The child had been complaining of slight pain in the right side and had manifested an indisposition to play and run with the other children, as was her wont. Her bowels had been somewhat irregular, slight constipation and diarrhea alternating with each other. She had apparently not been feeling very ill, but her aunt assured me that she had been looking very badly for several weeks. She also told me that the night before bringing the child to consult me she had looked her over herself, and had discovered a hard mass just above the groin upon the right side. On examination I found the characteristic induration about the caput coli and encroaching upon the region of Poupart's ligament. This was very slightly tender, immovable, did not pit on pressure, and presented no point of fluctuation. I immediately ordered the child to bed, with mild laxatives, and warned her friends of the possible necessity of an operation. The condition was so passive that at this time I felt that I was warranted in deferring operative interference. The child made an uninterrupted recovery, but had a recurrence about six months later. I suggested operation, but the case drifted from under my observation, and apparently again recovered without surgical interference. Whether or not more attacks have occurred —as is probably the case—I cannot say.

CASE III.—Seen in consultation. The patient, a lady thirty years of age, had been ill for five weeks. She had been suddenly seized with abdominal pain of a general character, which finally localized itself in the right iliac region. According to the statement of the attending physician, she had had quite an elevated temperature, running as high as 104° during the first week of her illness, after which the temperature had gradually decreased to 101°, and during the remainder of the time preceding my visit it had fluctuated between 101° and 102.5°. At the end of about a week after the onset of her illness the doctor informed me that he had detected a mass of induration in the right iliac fossa. This had gradually increased until the time I saw the patient, when it occupied the greater portion of the right iliac region, extending as high as the anterior superior spine of the ilium and nearly throughout the whole extent of Poupart's ligament. An obscure point of fluctuation was found just below the center of the indurated mass. Operation

was advised, but declined. Tapping the tumor with a hypodermatic syringe, for the purpose of demonstrating the necessity for operation, revealed the presence of pus—not as fetid, however, as that which usually characterizes these cases. This case did very well without operation, an opening finally becoming established through the abdominal wall.

CASE IV.—A young man, twenty-five years of age, who was under treatment for prostatic trouble, was attended by one of our prominent physicians for what was designated an attack of malarial fever. Within three or four days the patient had been given permission to go out of doors; indeed, he had at no time been confined to bed. His first act, on being allowed to go out, was to visit me, and incidentally, while a sound was being passed into the urethra, he told me that he had been feeling badly for a few days, having been slightly constipated and having had malarial fever. He asked me if malarial fever was usually attended by severe pain in the right side, and, being a little suspicious of cases of malarial fever with pain in the right iliac region, I gave him a thorough examination, and found that he had inflammation about the caput coli from a probable appendicitis, there being a distinct, although not extensive, induration. I made a diagnosis of appendicitis, which was confirmed by my associate, Prof. Harold N. Moyer. The temperature at this time was only 101°, with a pulse of about 110. The pain and tenderness in the right iliac region were not severe. I advised the patient to go into the hospital immediately, with a view of having an operation performed within a day or two, providing marked improvement did not occur. He declined operation, however, and, much to my consternation, stated that he was going back to his home in Pennsylvania immediately. I warned him of the risks of travelling in his serious condition, but my remonstrances were of no avail, and he started on his journey as he purposed. He arrived home safely and, somewhat to my surprise, recovered completely within a few weeks.

CASE V.—A young man, thirty years of age, who had been under my care for stricture, urinary fistula, and nervous syphilis, had been feeling badly for a week. He had complained of malaise, anorexia, and pain in the right side. His trouble began immediately after having carried a heavy person up a flight of stairs. He felt the pain come on with a sense of faintness during the effort. I was suspicious of impending appendicitis, and, although there was no fever when I first saw him, I strenuously advised him to report frequently, so that I might keep close watch of his condition. I saw nothing further of him for a week, at the end of which time I met him accidentally while I was attending one of his friends. He at this time told me, quite incidentally, that he had been feeling worse and had had a chill the previous evening. On examination I found that he had a temperature of 103°. I immediately sent him home, put him to bed, and made a complete examination. I found great tenderness in the right iliac region, some gurgling, but nothing further to suggest trouble about the appendix.

The case was in many respects so much like one of typhoid fever that I was in doubt as to the diagnosis for two weeks. At the end of this time an induration appeared; for several days prior to its appearance, however, the patient had complained of pain and difficulty in straightening the right leg. He could only obtain comfort when the leg was flexed upon the thigh and the thign upon the abdomen. As soon as the induration appeared the case was cleared up, and I proposed an operation, which was consented to. I found that the appendix, although enlarged and greatly elongated, contained no foreign body or perforation. It was, moreover, so closely adherent that it did not seem wise to attempt its removal, and it was accordingly left. On exploring the abscess-cavity thoroughly it was found to have burrowed upward in the direction of the kidney, the lower portion of which could be felt at the upper part of the abscess.

The contraction of the psoas muscle was easily explained by the course taken by the suppurative process. The pus had evidently formed posteriorly to the caput coli, and the process extended first upward in the direction of the kidney and then downward toward the iliac fossa. The wound was drained and dressed in the usual manner with rubber tubing and iodoform-gauze. On the second day feces appeared upon the dressing, and continued to escape for about two weeks. The fever disappeared, and the day after the operation the temperature was normal. The further progress of the case was uninterrupted, and terminated in complete recovery. The patient was warned of the danger of a recurrence, but, although the operation was performed several years ago, he has had no further trouble.

CASE VI.—This case was seen through the courtesy of my friend Dr. Bernays, of St. Louis. The patient was a man, about forty years of age, who had had several attacks of pain and inconvenience in walking, referred to the right iliac region. He had had syphilis, and on one occasion, when an induration had formed, had been treated with mercury and potassium iodid. On entering the hospital a mass of induration was found in the right iliac fossa, extending almost the entire length of Poupart's ligament. On evacuation by a long incision, parallel to Poupart's ligament, the iliac fossa was found to be occupied by an abscess with many loculi, and containing foul-smelling pus and masses of necrotic tissue. On passing the finger into the iliac fossa, it was found that the suppurating tract extended high up behind the colon, in the direction of the kidney, and that it had burrowed in a manner similar to that observed in Case V. The same contraction of the psoas muscle had also been observed as in Case V.

CASE VII.—Seen in consultation. A lady, forty-seven years of age, had suffered three months before I saw her with what was supposed to be typhoid fever. The history of the case, however, was a typical one of appendicitis. There was nothing in the family history to indicate tuberculosis. The onset of the illness had been quite characteristic of inflammation about the caput coli. When I first saw the patient an abscess was pointing just below the crest of the ilium, on the right side. This was

found to communicate with a sinus passing over the crest of the ilium into the iliac fossa, and down in the direction of the caput coli. Secondary infection of the bronchial glands had occurred, with perforation and pyothorax. For the latter condition I performed Estlander's operation. The case improved for some little time, but finally an abscess developed above Poupart's ligament, upon the right side. This was opened, and was found to consist of a number of compartments occupying the iliac fossa. A communication was found to exist with the sinus of the previously-formed abscess below the crest of the ilium. It was not deemed wise to open the peritoneal cavity at this time, nor has such operation at any time since appeared justifiable. I have held the opinion for some time past that the case has assumed a tuberculous character, and that the pelvic tissues have been quite extensively invaded. There is, of necessity, a serious gap in the history of this case, as I did not see the patient early in the case; but the history was so clear, as given by the attending physicians, as well as by the family and the patient herself, that personally I have not the slightest doubt of the appendicular origin of the trouble.

CASE VIII.—The patient, a woman of thirty-two, had suffered for some time from utero-ovarian trouble, unquestionably of gonococcal origin. She had also had, from time to time, attacks of indigestion, as she termed them, accompanied by considerable abdominal pain. I had seen her in one attack of this character, which was unquestionably an attack of appendicitis of a mild type. I had also treated her for uterine disturbance. The attack under consideration began with severe pelvic pain, radiating down the thighs and into the lumbar region. This was attended by fever, the temperature being about 101.5°. The usual line of treatment for pelvic inflammations was instituted. For about two weeks the case pursued the characteristic course of a severe pelvic peritonitis due to infection. At the end of this time intense pain in the right iliac region came on, with great tenderness over the entire right side of the abdomen, and an increase in the fever, the temperature rising to 103.5°. Under hot anodyne poultices the local condition improved somewhat, but after two or three days of comparative comfort I was hastily sent for, and was informed that the patient had been suddenly seized with severe abdominal pain, which was attended with faintness. For some days there had been a distinct tumor occupying the entire region of the colon, and the immediate inference to be drawn from the condition of the case was that either a perityphlitic abscess or a pus tube had ruptued. That pus tubes and severe perityphlitic inflammation coexisted in the case appeared to be certain. I proposed an operation, but the family requested that I obtain counsel, and I, therefore, called in Professor William E. Quine, who counselled against operation. Much to my gratification and surprise, that part of her condition referable to the colon improved very rapidly within a week or so, the patient at the same time passing a large amount of feces. The pelvic inflammation did not improve as rapidly as could be wished, and on my again suggesting an operation the case drifted out of my hands. I understand that she fell into the hands of a very competent physician of this city, who obtained an apparently successful result by simple local measures.

CASE IX.—A young lady, eighteen years of age, came under my care, suffering with severe pain in the right iliac fossa. She had previously been operated on for appendicitis, and, according to the statement of the attending physician, the appendix had been removed. As the physician in question is a very competent man, there can be no doubt upon this point. The patient appeared to be extremely neurotic and hysterical. The spine presented numerous points of tenderness, and, in short, was in a condition characteristic of so-called irritable spine. No tumor could be detected in the right iliac region, and upon this diagnosis I based my treatment. The case finally passed out of my hands into those of my friend Dr. Senn, and the patient was eventually cured by the application of the actual cautery to the spine.

I would not introduce this case into this series of observations, excepting to illustrate the fact that even though the appendix may be the starting-point of quite serious disturbance, pain may persist after the removal of the offending structure. One can readily imagine also that cases of a purely neurotic character may arise in which a mistake in diagnosis can easily be made.

CASE X.—A young man, eighteen years of age, was suddenly seized with pain in the right iliac region, fever, and vomiting. He was treated, for three days before I saw him, by the application of hot fomentations to the abdomen and the internal administration of quinine and opium. When I saw him the pulse was 140 to the minute; the temperature subnormal; the extremities cold; and the abdomen swollen, and tense as a drum. Surgical interference was out of the question, and although I had been sent for with a view to operative interference, I declined to operate, stating as my opinion that the boy could live but a few hours, and that operation would simply hasten the end. Death occurred twelve hours after my visit.

CASE XI.—A gentleman, thirty-five years of age, was referred to me, with a distant history of three, and perhaps four, attacks of appendicitis. At the time I saw him he was going about and attending to his usual affairs, although in the midst of what he designated a moderate attack of his old trouble. He stated, however, that the attack prior to the one for which he consulted me seemed to be worse than those which preceded it. There was slight induration in the region of the appendix, very slight fever, and no marked disturbance of the bowels. He stated that he had suffered for the greater part of the time from a moderate degree of constipation alternating with slight diarrhea. The nature of the trouble was explained to the patient, and operation proposed and consented to. I found, on opening the abdomen, that the appendix was greatly enlarged, thickened, and bound down by adhesions. There was but a small amount of pus about the

appendix—the quantity, I think, not exceeding two drams. There was no perforation of the appendix and no foreign body in its cavity. Recovery was uninterrupted, and the patient has since remained free from trouble.

This case, perhaps, does not present any features of extraordinary interest, but it happens to be the only case of recurrent appendicitis upon which I have operated, although I have operated in primary attacks quite frequently.

REMARKS.—Case I is an excellent illustration of the manner in which some cases of appendiceal abscess will discharge spontaneously into the bowel after a distinct purulent accumulation has formed. It is unfortunate in one respect that such cases occur, for in the hands of some so-called conservatives they are used as a powerful argument in favor of conservatism in all cases.

Case II is an illustration of the insidious character of some cases of appendicitis, and shows that an induration may form about the appendix with very little local or no constitutional disturbance. It also shows that in young children distinct and typical induration may occasionally be met. It may be remarked in this connection, that in young children in whom the peritoneum is relatively very sensitive, inflammation may begin in the appendix and result very rapidly in a fulminant peritonitis, which destroys the life of the little patient very quickly. Under such circumstances no induration forms, and the inflammation when diagnosticated by the physician is already of a general character. Such cases, I am confident, form a large proportion of the cases of so-called idiopathic peritonitis in children.

Case III is of a somewhat similar character, but I will embrace the opportunity to suggest that until we have some means of determining and controlling the direction of least resistance to the escape of pus in such cases they should receive very little consideration as arguments against operative interference. This much may be said of such cases, that an operation upon them is practically extra-peritoneal, and is but little more dangerous than the opening of an ordinary abscess in any other situation. Another point with regard to such cases when operated upon is, that they have been the source of the greatest glory to some operators. In formulating statistics of the results of operative interference in inflammations about the caput coli, the trifling importance of some operations made upon such cases should be taken into consideration.

Case IV is an excellent illustration of (1) the ease with which inflammation about the caput coli may be overlooked, and (2) of the fact that some patients bear a charmed life and will escape serious results in spite of all their efforts to destroy themselves. Most surgeons would have considered that an immediate operation was justifiable in this case, yet the patient took a long railroad journey, and not only escaped serious results, but completely recovered without an operation.

Cases V and VI are interesting from several standpoints. In the first place, the tardiness with which the pus came to the surface is quite noteworthy. This point, associated with the marked and painful psoas-contraction, is worthy of consideration in doubtful cases as indicating a retro-cecal location of the suppuration. Obviously when pus forms in this location it is slower in coming to the surface, and the induration may not be detected for some time, and a mistake in diagnosis is likely to occur. A valuable point for consideration is the similarity of cases of this kind to the cases of acute psoas-abscess reported by my friend Dr. J. McFadden Gaston, in the *Transactions of the Southern Surgical and Gynecological Association* for 1890. There is a question in my mind whether some of Dr. Gaston's cases may not have been similar in character to Cases V and VI. The question of the possible traumatic origin of Case V is well worth consideration. The fact that both cases had been affected by syphilis is interesting, although it probably has no etiologic bearing upon either case.

Case VIII is one of the most interesting of the series. Here was a woman suffering with two conditions, either one of which taken alone, according to our modern views, urgently demanded operation, yet in which complete recovery occurred without operation.

Case IX shows very clearly that conditions of a painful character in neurotic patients may apparently be perpetuated after the removal of the original cause. Physiologic habit is perhaps a weak explanation, but reflex disturbance of the nervous centers by peripheral irritation is seen sufficiently often to afford a logical explanation of such cases. Only too often a diagnosis of reflex irritation is questioned, because after the removal of the supposed *fons et origo mali* the symptoms still persist. It must be remembered, however, that prolonged pain means prolonged irritation in the presence of a real pathologic condition. This prolonged irritation may not only result in more or less impression upon the nerve-centers, but it may result as well in a disturbance of nutrition, even amounting to a neuritis of the nervous filaments immediately involved.

Case X is a beautiful illustration of the fact that there are some cases in which conservatism is little short of murder. The physician who stands over such a case, with a poultice in one hand and a hypodermatic syringe in the other, while, for obvious reasons, he may never be subjected to a suit for malpractice, certainly cannot justify his position in his own conscience if he be not wofully ignorant of the present

status of abdominal surgery and medicine. Had I operated upon this case there would have been another failure, for which the conservative man who had preceded me in the case would have given due credit to the abdominal surgeon. The trouble with most of our statistics is that they include not only the cases of men who lance abdominal abscesses, but the cases of men who operate upon patients who are in a moribund condition—who perform, in other words, a premature post-mortem. Cases of this kind form a large proportion of those cases of idiopathic peritonitis that we hear so much about and so seldom meet. My experience with this class of cases has been that the man who proposes to operate should do it then and there, and not postpone it to see how the patient will feel in the morning.

Case XI shows that perityphlitic inflammation and suppuration may occur in the absence of gangrene, perforation, or foreign body in the appendix.

While visiting the Detroit Medical Library Association a short time since I saw a specimen of a similar character presented by Dr. T. A. McGraw.

In conclusion, I will state my belief that the least that can be said of the foregoing series of cases which I have presented is that they illustrate the fact that there is a large number of cases in which we have no accurate basis for determining the advisability of operation on the one hand or of conservatism on the other hand. I might say, in passing, that we are not likely to obtain any very definite ideas upon this subject until a better classification of the cases that have been subjected to operation and those that have recovered under conservative measures has been made. There is absolutely no resemblance, for example, between such cases as are illustrated by Cases II and X, yet they are classified from a diagnostic and operative standpoint in the same category. Another point which I desire to insist upon is that there is too much operating upon patients who are in a moribund condition. Every failure under such circumstances goes to detract from the value and safety of operative interference in cases of appendicitis, and no part of the blame is assumed by the physician—who, perhaps, should assume all responsibility, inasmuch as he sent for the surgeon only when he found that the patient was *in extremis*.

834 OPERA HOUSE BLOCK

For Epilepsy.—FLECHSIG (*Neurolog. Centralbl.*, No. 7; *Prager medicin. Wochenschr.*, No. 16) proposes a new method of treating epilepsy. For a period of six weeks opium in the form of the powder or extract is given in progressively increasing doses, from ¼ of a grain up to as much as 5 grains, two or three times a day. The opium is then abruptly withdrawn, and bromid in doses of about 40 grains, three times a day, substituted. At the end of two months the dose of bromid is gradually diminished.

THE DYSPEPSIA OF HYPERACIDITY.[1]

BY L. WOLFF, M.D.,
CLINICAL PROFESSOR OF MEDICINE, WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA; PHYSICIAN TO THE GERMAN HOSPITAL OF PHILADELPHIA; DEMONSTRATOR OF CHEMISTRY, JEFFERSON MEDICAL COLLEGE, ETC.

THE physiologic fact that hydrochloric acid is necessary to produce the proteolytic effect of pepsin made it appear, before the chemistry of the stomach was better understood or studied, that in all digestive derangements there would have to be necessarily an absence of either the enzyme or the acid. Since it has been shown that the pepsin of the stomach is probably never absent, the pathology of dyspepsia has been based upon the assumption that the less HCl, the less active the gastric digestion, and *vice versa*. With the quantitative study of the gastric secretions, this assumption was soon dispelled, for, according to Boas, from 50 to 60 per cent. of all dyspepsias are due to an abnormal increase in the hydrochloric acid in the gastric juice rather than to subacidity. This seems almost paradoxic, especially if we consider the fact, also developed, that under the circumstances proteids are well digested, and that the expressed secretion has a high proteolytic power. In the same measure, however, in which, by an increased HCl acidity, the albuminoids are more readily digested, the conversion of starches into sugar is retarded or even abolished. Thus, we find here the first evidence of a disordered digestion in the interference with the amylolytic process of the stomach.

It has been ascertained by chemical research that the proportion of HCl in the contents of the gastric juice at the height of the digestive process is about 0.25–0.3 per cent. or 2.5–3.0 per mille. This, according to Bunge and others, is about the amount necessary to render the food-bolus aseptic, constituting one of the most important and principal functions of the HCl secreted by the glandular apparatus of the gastric mucous membrane. The fact that dogs whose stomachs had been entirely extirpated lived for over five years, digested, and grew fat, showing not alone a perfect digestion but also assimilation, would bear out the view that the stomach itself, as a vehicle for digestion, is not of as great importance as is usually attached to it. That it is a preparatory receptacle for the food, in which the latter is first of all deprived of the microorganisms with which all food swarms, and that certain predigestive processes are necessary to insure a subsequent proper pancreatic and intestinal digestion, seems out of question.

To arrive at the etiology of the HCl over-production we find that there are no certain causes save

[1] Read at a meeting of the J. Aitken Meigs Medical Society, March 9, 1893.

those attributable to the sensory nerves and the reflex action produced by them. While in ordinary gastric digestion the hydrochloric acid will but slowly develop, following the lactic fermentation, in hyperacidity we can find acidity already developed within 10 minutes after the trial-breakfast, and within from a half to three-quarters of an hour rapidly increased to its highest limit. Thus we see that the irritation of the food on the gastric mucosa, which is considered as the normal cause of the HCl secretion, is abnormally responded to, and that greater quantities are produced and poured out. So much is this the case that the contents of HCl in the gastric juice have been stated in such cases at as much as from 0.4 to 0.5 or 0.6 and even 1 per cent.(?) We see again that the gastric motility is greatly dependent on the HCl present, and that the alkaline mucous membrane of the pyloric portion of the stomach is by it reddened and tumefied, thus lessening the lumen of the pyloric orifice. Pyloritis resulting from hyperacidity is only the first step in hyper-motility, which must necessarily result in ectasis and subsequent incurable atony and atrophy of the gastric mucous membrane. But it is not the remote effect of increased HCl secretion alone that I desire to consider here, but rather the immediate effect upon the digestion, the proper elaboration and assimilation of the food.

The food-bolus of hyperacid digestion is propelled through the pylorus, and already in the pyloric portion of the stomach some neutralization takes place. In the duodenum it meets the alkaline pancreatic and biliary secretions. The digestion there, both of proteids and carbohydrates, is by far greater than can be the case in the stomach. The great proteolytic power of the pancreatic secretion has been experimentally demonstrated. The amylolytic power of the salivary and gastric secretions can be said to be much smaller in proportion to those of the pancreatic fluid. The pancreatic secretions, however, depend for their action upon a distinct alkaline reaction. If the food-bolus of the stomach is of an acidity to neutralize or more than neutralize this, the result must be evident. Intestinal digestion cannot go on, and the food-bolus, in which the micro-organisms were not destroyed but only inhibited from development and propagation, now falls an easy prey to microbic action developing in the partly-neutralized chyme.

The yeast-cells produce alcohol, butyric and lactic acids, with carbonic acid (expelled by frequent and deep eructations), while the proteids, in their decomposition, give rise to ptomaïnes and poisonous gases, the latter readily recognized by the odor of the eructations. The absorption of poisonous material manifests itself by vertigo and headache; the presence of the acids on the intestinal mucous membranes produces hyperemia, swelling, and catarrhal inflammation generally; and while the nutrition is lowered by the abnormal food-decomposition, the catarrhal affection itself, extending over larger and larger surfaces of the intestinal tract, prevents assimilation of such food-material as has been properly elaborated.

The symptomatology of dyspepsia from hyperacid digestion is one that can easily be explained by the pathologic conditions pointed out. The tongue is usually clean, but may also in long-continued conditions become large, coated, flabby, and marked by the imprints of the teeth. The buccal exhalations are usually fetid, especially after eructations; the teeth exhibit a marked tenderness, and are often found carious; and as hyperacid dyspepsia is preëminently a disease of early life, it accounts for the loss of teeth in that period. The pulse is sluggish and there is marked languor, dulness, and sleepiness; frontal headache and vertigo are frequent. Eructations begin within a few hours after meals, and are usually of a deep guttural character, often also forcing the acid gastric contents into the esophagus and mouth, and causing a burning and acid taste. The eructations at the latter part of gastric digestion frequently contain bile, and have consequently a bitter taste. Vomiting, while not the rule, may under such conditions be frequently noticed. Within an hour or two after eating there will be burning in the epigastrium, increased often to intense gastralgia, felt both anteriorly and beneath the left scapula. The bowels are constipated, the abdomen distended; and at intervals diarrheas with violent colicky pains may occur. The skin soon becomes sallow and the sclera icteroid. The bodily weight diminishes, and the mucous surfaces show the pallor of anemia. The nervous system presents the characteristics of neurasthenia, fatigue, languor and lack of energy, in a marked manner. Slight fever follows usually within a few hours of the ingestion of food, and often continues almost constantly, with alternate rigors and flushed countenance. The appetite, while capricious at first, soon diminishes, and often fails. The ingestion of albuminoids and drinks is generally found to give relief from the gastric distress; and the signs of subsequent ectasis, with atony and atrophy of the mucous membrane, may follow in the wake of such cases.

The diagnosis of hyperacid dyspepsia can never be based on the anamnesis and symptomatic complex alone. Almost all disturbances of digestion may run a similar course, and, as has been pointed out, very opposite conditions may develop from it. In view of the vast advantages such cases may derive from treatment, and the serious results that may follow misapplied therapy, it is of the greatest importance that an early diagnosis

be definitely established. This is possible only by the modern means which have been placed within our reach. The chemical examination of the stomach-contents alone, made at frequent intervals and after the well-established trial-meal, will enable us to define the true condition of the digestive disturbance. This can only be accomplished by means of the stomach-tube. This should be used within an hour, or if possible within half an hour, and again an hour after the trial-breakfast, as proposed by Ewald and Riegel, consisting of from 50 to 100 grams of dry bread washed down with a cup of tea or water. The recognition of the HCl should be relied upon by the phloroglucin-vanillin or the resorcin test, as these will only show the HCl and not organic acids or acid phosphates. The former deserves, perhaps, the preference over the latter. If HCl is found present within from 15 to 30 minutes after ingestion, an indication of hyperacid digestion is already at hand. But even this will not suffice, for the quantitative determination of the acid will alone justify us in arriving at a conclusion. To this end at least 30 c.c. of the gastric fluid should be expressed through the tube. This should be filtered and the filtered liquid tested for its total acidity. This can be readily done by placing 10 c.c. of the filtered gastric juice in a capsule or flask, to which a few drops of an alcoholic solution of phenolphthaleïn are added. Into this, from a graduated burette, the deci-normal solution of sodium hydrate is allowed to flow, drop by drop, until a slight roseate hue indicates the neutralization of all of the acids.[1]

After the total acidity is thus obtained the total hydrochloric acid is now determined best by Mintz's method.[2]

The chemical diagnosis completed, the only features to be considered are those of differentiation. Here we have only two conditions in which hyperacidity supervenes, of which the more frequent is gastroxynsis, in which the hyperacidity is due to a special irritation, such as psychical strain, ingestion of acid and irritant substances, and also very often after smoking, especially of very strong tobacco. This condition is accompanied by supraorbital headache, gastralgia, and epigastric burning, nausea, and finally vomiting of the irritant contents of the stomach. It is relieved by the drinking of dilutents, but as the paroxysms are rather isolated than regularly accompanying or following ingestion of food, and as the exciting causes are usually obvious, the differentiation ought to offer no difficulties.

The other condition is that of hypersecretion, also termed succorrhea. The differentiation of this from hyperacidity is comparatively easy if it is borne in mind that it exists in the stomach without the additional irritation or provocation of food or ingesta. It can be found in the empty stomach, especially in the morning, and the fluid can be expressed in quantities of from 100 c.c. to 1000 c.c., and is often vomited in the morning and then known as water-brash. It also has the symptoms of hyperacidity accompanying it, and the gastric juice so freely obtained in these cases contains from 2 to 4 per mille of HCl. A stomach which has been washed out at night, and from which, without taking food during the night, large quantities of hyperacid or even acid gastric juice can be evacuated in the morning, is subject to hypersecretion rather than the characteristic hyperacidity.

That the three neuroses of hyperacidity, gastroxynsis, hypersecretion, and hyperacidity proper, are closely associated and can arise one from the other is no doubt true, but the three are typical and different affections which produce different results, and depend for their amelioration and cure on different treatment. In point of diagnosis I should also mention the condition of the urine in hyperacidity. This is generally found alkaline and deficient in chlorids. As the HCl of the stomach must be derived from the chlorids of the blood and from the action of

[1] A normal solution of sodium hydrate is one that contains as many grammes of NaOH in a liter as is its molecular weight (Na = 23, O = 16, H = 1, total M.W. = 40) *i. e.*, 40 grams to one liter. As the sodium hydrate, owing to its deliquescent nature, is never uniform in strength, it can be practically made by first taking a somewhat stronger solution (45–50 to a liter), and then titrating with it a semi-normal solution of oxalic acid (63 grams crystallized oxalic acid in distilled water, q. s. to 1000 c.c.). This is diluted so that the number of c.c. NaOH solution neutralizes exactly an equal number of the semi-normal oxalic acid solution. Of this normal volumetric sodium hydrate solution, take 10 c.c. and dilute in a 100 c.c. graduated flask with distilled water to 100 c.c., which gives the *deci-normal* solution of sodium hydrate. The measurements of these solutions should be made at 60 F.

[2] This is effected by adding to another 10 c.c. of the filtered gastric juice, one c.c. at a time of the deci-normal sodium hydrate solution. After the addition of each c.c. the fluid has to be stirred and tested with the Günzburg test. To this end a drop or two of the phloroglucin-vanillin solution is dropped into a white porcelain capsule and is well mixed with an equal amount of the gastric juice. By passing the capsule through or over the heat of a lamp the fluid is allowed to evaporate without reaching the boiling-point, whereupon, if HCl is present, a red color, more or less intense according to the amount of HCl present, will appear. When the Günzburg reaction made in this way is getting more and more pale, and finally is absent altogether, the last tenth of a c.c., or rather, the last c.c., plus 0.1, is taken as the one at which the reaction occurred. Both the total acidity and the HCl acidity are best expressed as though the test had been applied to 100 c.c. gastric juice. Thus if the total acidity has been indicated by 12 c.c. of the deci-normal soda solution the total acidity should be indicated as 120, and if the total acidity had not been indicated at 10 but after 9.9 c.c. of the deci-normal sodium solution, the HCl acidity should have been noted as 10 or 9.95. As each c.c. of deci-normal soda-solution corresponds to 0.00365 HCl the total HCl in 100 would have been 0.365. The difference between the 120 of total acid and the 10 HCl would then be represented by organic acid and acid phosphates, which, however important they are in subacid conditions, are of little consequence in hyperacid digestion.

the acid sodium carbonate on the chlorids, probably according to the following formula:

$$NaHCO_3 + NaCl = Na_2CO_3 + HCl.$$

It will be found that not alone will the blood be deprived of chlorin, but in consequence of the acid sodium carbonate being converted into the normal sodium carbonate, the blood also becomes more alkaline, and the change of the neutral sodium phosphate of the blood into the acid sodium phosphate of the urine becomes less, if any takes place.

The prognostic features of hyperacidity, as already pointed out, may be such as to promise ready relief, but again some of the severer complications may not only impair health, but threaten life. Thus, if resulting in ulcer, the prognosis is not always favorable, and if pyloritis should result, with consequent ectasis, the impairment of health would certainly be a serious one. The secondary intestinal catarrhal conditions produced by the acid and improperly prepared chyme, and the accompanying malassimilation and malnutrition, are only too well known to need comment. If the sensory disturbance can be known or traced, an improvement of the vicious function may be accomplished, but if chronicity persists it will sooner or later lead to the graver complications already pointed out. It seems only necessary to remark that it affects adolescents more frequently than older persons, and that many so-called cases of chlorosis with obstinate constipation and alkaline urine have their origin in hyperacid dyspepsia.

The treatment of hyperacid dyspepsia is one that must primarily depend on the removal of the etiologic factors. To this end, if arising from a principally sensory neurosis, the nervous system should be toned up by exercise, cold baths, and skin friction, athletics, horseback-riding, and with all a healthy mental occupation. Surf-bathing and ocean travel often produce a favorable influence when no amount of medication will induce the slightest change. Together with this, dietetics are of importance. The diet, as soon as the character of the digestive derangement is ascertained, should be largely animal, and, contrary to that employed in the lithic diathesis, the darker meats are preferable. They can neutralize more HCl than the white meats. Milk-diet is much recommended in this connection, but is not always borne. The milk curdles readily, and the acid makes the curds firm, which in turn stimulate the gastric mucous membrane to greater secretion. Buttermilk answers this purpose much better, and is generally easily digested. Raw or very soft boiled eggs are the very best diet; also oysters and fish. Vegetables, starches, and sugars are not indicated, and should be avoided. To fill the want of carbohydrates, already partly converted amyloses should be taken, *i. e.*, toast, zwieback, rusks, etc. Buttered toast and milk-toast are among the best carbohydrates and derivatives thereof that can be taken. Coffee and chocolate are not permissible, but tea, on account of its astringent properties, is both well liked and often gives prompt relief to the pyrosis. Broths with raw eggs stirred into them are of advantage. Fats are not contra-indicated, but fried food is strictly so. Amongst all fats butter is the best substitute for the carbohydrates which are to be avoided.

One of the main features of the diet should consist in the absence of salt, salted meat or fish, or saline broths. While by administering more salt we cannot compel the peptic cells to secrete more HCl, we can starve their vicious secretion into submission by the withdrawal of chlorin compounds. All HCl must necessarily come from the ingested chlorids, and if we diminish these we must certainly diminish the facilities for its production. This is the more the case, as with an almost exclusive animal diet there is but little use for salt.[1]

The mechanical therapy by means of lavage finds here, perhaps, one of its most important uses, not alone that by washing out the stomach with an alkaline fluid the amount of HCl can be neutralized and removed, but by the mechanical action of the current the over-stimulated glands become quieted down and less hyperemic. To this end the stomach should be washed out with several quarts of warm water containing one or two teaspoonfuls of $NaHCO_3$ before the principal daily meal. The medicinal treatment must necessarily be limited to evacuants and correctives. It is customary for the purpose of evacuation to administer Carlsbad salts in the morning while fasting, but as these contain considerable chlorids, which for the reasons given are contra-indicated, I have been in the habit of employing for some time past a mixture of one dram of sodium bicarbonate to one ounce of crystalline sodium sulphate. Of this mixture a heaping teaspoonful or two taken in a glass of hot water before breakfast answers the purpose of an antacid and a mild laxative to excellent advantage. As a corrective I use sodium bicarbonate, but instead of administering it after food I have for some time past found it much better borne and of greater efficacy if taken some time before meals. The amount of alkali so needed is less; and the stomach, together with the duodenum, becomes neutralized prior to the ingestion of food. The large doses of sodium bicarbonate sometimes recommended are not serviceable, as it is a well-known fact, proved by the equation given, that it is mainly by the conversion of the bicarbon-

[1] Compare Chapter V of Bunge's Lehrbuch der physiologischen und pathologischen Chemie.

ate into the carbonate that the HCl is liberated. For purposes of relieving the pyrosis, magnesia, and especially the milk of magnesia, is preferable to the alkaline carbonate. The bitter tonics answer to excellent advantage in combination with the alkalies, while at times in the nervous excitations sodium bromid may find application. Promiscuous and meddlesome medication is, however, uncalled for and to be deprecated in this affection.

ADDITIONAL NOTES ON THE DIAZO-REACTION.

BY ALDRED S. WARTHIN, A.M., M.D.,
DEMONSTRATOR OF CLINICAL MEDICINE, UNIVERSITY OF MICHIGAN, ANN ARBOR, MICH.[1]

THE fact that our use of chemical tests of the urine as important elements of diagnosis is practically limited to the recognition of albumin, sugar, and bile-pigment, has led many investigators to seek for new reactions that may be found in the urine of pathologic cases, in the hope of finding tests having definite diagnostic importance. So, when Ehrlich, about ten years ago, announced his diazo-reaction as a test having diagnostic significance in the early stages of typhoid fever, and of prognostic importance in pulmonary tuberculosis, it was hoped that a new and valuable reaction had been added to the meager list already in our possession. But, since that time, the many workers who have investigated the reaction have arrived at the most diverse results regarding its occurrence and value, and at this date the significance of the reaction cannot be said to have been finally determined. The matter has been brought to notice so many times that it may now seem trite; but when we consider our poverty in urine-reactions of diagnostic value, and the immense gain to be obtained by the discovery of any new test of a possible aid in diagnosis, the subject will bear constant revival, until the worth of the reaction has been settled beyond all doubt.

Reviewing briefly the literature, we find, first, Ehrlich's announcement of a new test, discovered by making use of the well-known property of the diazo-compounds to form color-bodies with aromatic substances, and the application of this principle to the testing of urines, by means of a reaction-mixture containing a small amount of nascent sulphodiazo-benzol. When equal parts of the reagent and urine were mixed, and ammonia added, there was obtained a yellow color in normal urine, but in many pathologic urines a red color, which by shaking showed most markedly in the foam, and after standing deposited a green pigment. From his experiments with this reaction, Ehrlich arrived at certain conclusions, the most important of which were, that the reaction is one of the most constant signs of typhoid, and of both diagnostic and prognostic importance in that disease, and a sign of bad omen in pulmonary tuberculosis.

These observations were confirmed by Fischer, Brecht, and Löwinson; but opposed on the other hand by Penzoldt and Petri, who stated that the reaction occurred in normal urine, and in many pathologic conditions, and hence did not have diagnostic value. Penzoldt believed that the color-changes were quantitative, and not qualitative; he did not consider the behavior of the foam, and concludes that the reactions were caused by substances present in both normal and pathologic urine, but not appearing in typhoid in such characteristic manner as to have diagnostic worth. He also discovered that the reaction was unusually brilliant in the urine of diabetes.

These results were answered by Ehrlich, who claimed that they were due to a misapprehension of the reaction, and resulted from poor technique. He therefore stated more exactly the composition of the mixtures used, and described the technique. He further declared that milk or grape-sugar did not give the reaction.

He was then sustained by Escherich, who found the red-foam reaction only in typhoid and morbilli, and a purple-red reaction in diabetic urine. Penzoldt, after working again on the more definite lines laid down by Ehrlich, came a second time to the conviction of the worthlessness of the reaction as an element of diagnosis, concluding that the bodies that produce the reaction are of a different kind, and are not yet known, and that the color-changes are not qualitative.

Georgiewsky agreed with Ehrlich, speaking of the reaction as carmine or purple-red, especially marked in the foam. Spiethoff also upheld the diagnostic value of the test, but limited the reaction to those cases only in which a green precipitate is observed. Petri again, following Ehrlich's method, investigated the significance of the reaction in tuberculosis, and found it to bear no relation to the course of the disease. The same conclusion was reached by Brehmer, while Grundies constantly found it to be a bad sign in this disease.

Brewing found the reaction to be of diagnostic and prognostic importance in four conditions, typhoid fever, pulmonary tuberculosis, puerperal conditions, and concealed septic processes, such as liver-abscess; but that in typhoid it is of diagnostic value only in connection with the other symptoms. Rütimeyer considered the reaction diagnostic in typhoid. Bacnacci believed that the test had some relation to sugar and acetone, and stated that thymol, strychnine, and iodol will produce the reaction. Simon considered the appearance of the

[1] From the Laboratory of Clinical Medicine, University of Michigan.

foam as a characteristic feature of the reaction, and found it only in typhoid and pulmonary tuberculosis.

Edwards considered only the color of the ring formed at the junction of the NH_4OH, and the mixture of urine and reagent, and found a red color to be independent of any disease or group of diseases, and untrustworthy as a diagnostic sign in typhoid. He concluded that the reaction must be caused by many different substances. Finally, Munson and Oertel have just announced that they have discovered diacetic acid to be the cause of the reaction, and that its diagnostic importance depends, therefore, upon the relation of this substance to disease, which has not been found to be of great importance.

From the widely varying results of different investigators, and the consequent difference of opinion regarding the clinical value of the test; and from the fact that several recent text-books have mentioned the test as a probable sign of typhoid fever, I have been led, by a suggestion from Dr. Dock, to make, during the past year, systematic investigation as to the occurrence of the reaction. To that end, in the Laboratory of Clinical Medicine over 1500 diazo-tests were made, not counting many quantitative variations of the test in the same urine. These covered 400 cases, and included a great variety of chronic internal diseases, many acute diseases, numerous surgical conditions, and a small number in which the urine was normal. In certain cases the tests were made daily for several weeks. I was thus enabled to obtain a certain amount of definite clinical knowledge regarding the test, and to draw certain conclusions concerning its value and occurrence.

The method used was the prescribed one. Two solutions were prepared in separate bottles: Solution No. 1, consisting of hydrochloric acid, 50 c.c., distilled water to equal 1000 c.c., and saturated with sulphanilic acid; solution No. 2, consisting of a ½ per cent. solution of sodium nitrite. When desired for use, 40 c.c. of solution No. 1 is mixed with 1 c.c. of solution No. 2. Equal parts of this mixture and urine are then mixed in a test-tube, and ammonia added, so as to form a layer above the mixed urine and reagent. At the junction of the two layers the colored ring is formed, which, when varying from an eosin or carmine to a deep-garnet color, has been styled the diazo-reaction.

After noting the color of the junction-zone, I carried the test further by shaking up the mixture in the test-tube, and noting the appearance of the foam. In this way I found early that urines giving a typical diazo-reaction in the color-ring could be divided into two distinct classes after the shaking-up process, viz.: Urines giving an eosin-pink foam of greater or less intensity, not quickly fading, and urines giving colorless foam, or a color quickly fading. This division of the reactions I found to be exceedingly important when considering the diagnostic value of the reaction.

Edwards gives a review of 600 tests. Acording to his article, the color-ring only was regarded, a hue from eosin to garnet being recognized as the Ehrlich reaction. No attention was paid to the characteristics of the foam, or to any division of the reactions, so far as any peculiar behavior of the color in the foam is concerned. In my work I quickly came to the conclusion that this very striking characteristic of the foam was the most important feature of the reaction; and upon it alone could be based the claims of the reaction to any diagnostic significance.

In my tests, proceeding upon the same basis as Edwards, that is, calling a ring of color varying from eosin to garnet the Ehrlich reaction, I arrived not only at the same conclusions obtained by him as to its widespread occurrence in disease, but I also found it in the urine of healthy persons and in the urine of persons suffering from minor surgical conditions, but otherwise healthy. Obtaining this reaction in health, in chronic diseases of heart, lungs, kidneys, and stomach, in rheumatism, acute and chronic enteritis, febricula, tonsillitis, measles, scarlatina, etc., and in minor surgical conditions, I could only confirm his observations, that it was a reaction of frequent occurrence, bearing no relation to any disease or group of diseases or to any peculiar condition, and hence of no diagnostic importance.

But the foam-color reaction was so striking when obtained as to leave no doubt as to its being a reaction of definite peculiarity and significance, and I came to consider it alone as the typical diazo-reaction, throwing out all other urines, in which the foam did not show a pink or eosin tinge, even though the ring showed the typical shades of color. The color of the ring and foam of the accepted reaction varied from rose-pink to deep cherry-red, never showing any violet hue, the foam always retaining the color until settled. In no case did I observe a green precipitate; this may be explained by the fact that the test-tubes were probably not left standing long enough for the pigment to settle.

Why, in the case of two urines giving precisely the same ring-color, the foam of one should present the color, and that of the other be colorless I cannot presume to answer. It was suggested that probably the presence of mucin played a part, but this was found not to be the case, for the removal of the mucin did not affect the behavior of the foam. The reaction is analogous to the behavior of two dark urines, one containing bile-pigment, the other colored by uric acid and urates. On shaking the

bile-containing urine a permanent yellow foam results; the other gives a colorless foam.

I found that by accepting the foam-test as the reaction, I greatly limited its occurrence, finding it only in those conditions mentioned by Ehrlich and others whose work tended to confirm his investigations. According to the standard mentioned, making the foam-test the reaction, I found positive results only in the following:

Typhoid fever. Case I. The reaction was present from the ninth day to the twenty-first. Relapse occurred in the fifth week. Reaction again present.

Case II. Reaction from sixth day to sixteenth.

Case III. Only one test, made in second week. Reaction present.

Case IV. Reaction present in second week.

Case V. Reaction present from the fourth day to the seventeenth.

Tuberculosis, advanced pulmonary. Eight cases. Reaction almost constantly present. One case of incipient pulmonary tuberculosis, without physical signs. Bacilli were found in minute pus-bits in the sputum. The patient had been treated for malarial fever. The reaction was brilliant, varying in relation to patient's symptoms.

One case of tuberculous iliac disease was complicated with empyema, and exhibited a typhoid state two weeks before death. Reaction was brilliant during this period. No intestinal lesions existed.

One case of enlarged axillary glands removed as new-growths, stated by Dr. Gibbes to be tuberculous. Reaction was constantly present.

Carcinoma. Two cases of carcinoma of stomach.

Sarcoma. One case of retro-peritoneal sarcoma. These three cases were in extreme stages of exhaustion, and in a condition of intoxication resembling the typhoid state. Death occurred soon after coming under obervation. The reaction was brilliant in all three cases, and constantly present.

Osteomalacia (case to be reported). An unexplained rise of temperature occurred, lasting several days, during which time a brilliant reaction was present.

Nephritic abscess. One case. Reaction present for two days after removal of the diseased kidney.

Pleurisy and bronchiectasis. One case, showing a weak reaction.

Chronic ulcerative enteritis. One case, the patient very cachectic. Reaction existed at intervals.

Auto-intoxication (?) resembling the so-called diabetic coma. Urinalysis gave no proofs of the existence of sugar, acetone, or diacetic acid. Marked typhoid condition was present from entrance on the eighth day of illness to death, four days after. Patient was comatose during the last two days. Brilliant reaction was present from entrance to death. This was the most intense reaction of any that I have seen. Post-mortem examination was absolutely negative as to lesions.

Acute tonsillitis. In a surgical case with pyelitis, and a temperature of 106°, brilliant reaction existed for three days. Other cases of uncomplicated tonsillitis as severe gave no reaction.

Erysipelas. One case. Moderate reaction existed for four days from the beginning of fever.

In five cases of febricula, one in which typhoid was suspected at the beginning, but did not develop, and in one case of perityphlitic abscess, resembling typhoid, the foam-reaction was not obtained. In three cases of diabetes no reaction could be obtained; and I have never been able to obtain a similar reaction with glucose, as Penzoldt claimed to have done.

This division of the test into two classes, according to the behavior of the foam and the importance of the foam-test, do not seem to have been recognized by all who have investigated the reaction; and it is probable that from this arises in part the conflicting results obtained by so many workers. The experimenters who have considered the importance of the color in the foam would find the reaction limited in its occurrence very nearly to the conditions mentioned by Ehrlich and those who have confirmed his results, such as Simon in this country; while those, like Penzoldt, Edwards, etc., who have considered the ring-color chiefly, or alone, would find the reaction in the whole catalogue of disease —even in health—and in consequence would draw different conclusions as to the diagnostic worth of the reaction.

Faulty technique may also give rise to incorrect conclusions, for, as Penzoldt and Petri have shown, an increased strength of nitrite solution deepens the color of the mixture. The amount of this reagent used according to Ehrlich's method should be 1 c.c. of a ½ per cent. solution. In the recent paper of Munson and Oertel, a 5 per cent. solution of sodium nitrite was used. From my tests, urines giving a yellow ring with Ehrlich's solution would give a red color with the stronger solution—the foam, however, not being affected.

Since the appearance of Munson and Oertel's paper, claiming aceto-acetic acid to be the cause of the reaction, I have had three urines giving the diazo-reaction, and these did not give the reaction for diacetic acid with ferric chlorid, and two other urines giving a typical Ehrlich reaction had been tested with ferric chlorid, and did not give the Bordeaux-red color obtained when diacetic acid is present. One of these, as mentioned, gave a most intense diazo-reaction. The reaction in these five urines was, therefore, not caused by diacetic acid.[1]

Further, in direct contradiction of the work of Munson and Oertel, it was impossible by the test, or by any modification of it, to obtain with aceto-acetic acid, made for my tests by Dr. Freer, of the University Chemical Laboratory, who has done important work in that field of organic chemistry, a

[1] Since the above was written, I have had two cases confirming the belief that diacetic acid plays no part in the production of the positive test.

reaction in any way resembling the diazo-reaction. Only a light-yellow color, with colorless foam, and, with strong nitrite, orange-color could be obtained. The potassium salt of the acid gave the same reaction. I cannot explain this contradiction, but from the fact that five diazo-urines gave no ferric-chorid reaction for diacetic acid, and that specimens of the acid itself, prepared by a well-known authority in organic chemistry, gave no diazo-reaction, I cannot agree with the conclusion of Munson and Oertel that aceto-acetic acid is the cause of the reaction, and must believe that the agent is as yet unknown. Thymol, iodol, strychnine, sugar, and acetone, do not give the reaction.

In conclusion, I should say that the reaction in which the foam presents the characteristic color is the only striking and important reaction obtained by the method. The cause of the reaction is as yet unknown, or it is produced by more than one substance. It bears a certain relation to a condition of disease. Typhoid fever is rare here, and from our five cases a general conclusion could not be drawn; but it occurred in every case, and in such a manner as to be looked upon as a sign. Moreover, the reaction was not found in cases in which, at first, the diagnosis from typhoid was doubtful.

The reaction was found in only one-fourth of our cases of tuberculosis, but in those patients in whom the constitutional symptoms were strongly marked.

The common feature of all of the cases in which the reaction occurred was a more or less pronounced typhoid state. The test, when positive, seemed to be a distinct feature of a condition of auto-intoxication, characterized by weakness, lassitude, headache, stupor, fever, etc., and varied in proportion to the condition, the most brilliant reaction being obtained in the fatal case of coma.

It is reasonable, therefore, to infer that the test bears some relation to an unknown chemical agent playing a part in the production of a state of intoxication similar to the typhoid state.

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TIC DOULOUREUX FROM VISUAL DEFECT.

BY ERNEST B. SANGREE, M.D.,
OF PHILADELPHIA.

ONE year ago I examined the eyes of Mr. C., a man thirty-five years of age, who had suffered ten years from frequently recurring and most atrocious attacks of tic douloureux affecting the fifth pair of nerves on the left side. During this period he had been under the care of many different physicians and had made trial of about everything that the books suggest or that those physicians could think of, but with never more than temporary alleviation, and generally without the slightest benefit. Latterly the attacks had been growing more frequent, until they averaged about one a month. During an exacerbation he was kept from his work for from a few days to a week or more. Each attack began mildly with darts through the left side of the head, which hourly increased in frequency and intensity until he fairly writhed and shrieked with agony. As is well known, victims of this malady have not infrequently committed suicide in order to end their sufferings. Several years ago I recollect hearing a man who was about to take ether preparatory to an attempt at removal of the superior maxillary nerve at its escape through the foramen rotundum for this trouble, earnestly declare on the operating-table that if he were not relieved of his frightful torture he hoped to die on the table.

Mr. C. also told me that he had often seriously debated putting an end to his life. As for an operation, he was willing to undergo one of any magnitude whatever that offered the slightest prospect of relief. I cite these facts in order to show that this was really a well-marked case of this severest of all affections in intensity of pain. There was ptosis of the left eyelid and a general appearance of malnutrition about the region of the left eye, as well as of the ball itself. The ptosis had gradually developed during his attacks, and both ptosis and general malnutrition were doubtless due to trophic disturbances in the distribution of the nerve, the result of the repeated convulsions (if I may so term them) of its substance. Nothing particular was to be seen by the ophthalmoscope but an irregular nerve. His vision was as follows

R. E.—V.= 15/20. Type 0, 6/5-16 inches.
L. E.—V.= 15/70. Type 0, 6/5-10 inches.

Under homatropine:

R. E.—V.= 15/70 + ⊃ + 0.50 cyl. ax. 120° = 15/15.
L. E.—V.= 15/100 + 1 cyl. ax. 105° ⊃ — 1 cyl. ax. 15° = 15/40.

The retina of the left eye was probably again as sensitive as that of the right, but between the trophic disturbances of the eyeball and many years of indistinct images it had lost, to a great extent, the power of visual acuteness. I ordered the full correction as found under the homatropine. Since wearing these glasses the man has had but one attack of neuralgia, and that of by no means the virulence of former ones. This attack came about two months after receiving the glasses. Since then he has had no severe exacerbation, but has suffered more or less from pain. This I trace to the degeneration the nerve has already undergone, and I am of the opinion, on account of the indescribable difference between his

present condition and that before glasses were worn, that if proper correction had been made years ago, when the trouble first began, the cure would have been complete.

I have thought this case worth reporting, both on account of the intensity of the patient's sufferings, the simplicity of the cure, and on account of the fact that throughout the country operations of the most dangerous and sanguinary character are daily performed for the removal of branches of the fifth, some of which cases, at least, may be due, as mine proved to be, simply to reflex irritation from defect in vision.

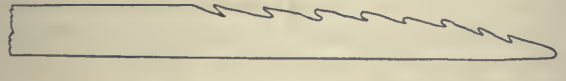
A PECULIAR INJURY OF THE EYE.

By G. C. MOOREHEAD, M.D.,
of Ida Grove, Iowa.

A rare accident to an eye has recently fallen under my observation:

Mr. S. B. A., while attending to his bees, was stung by one upon the right upper eyelid near its center. An employé, who was assisting in the work, immediately discovered the sting driven in the lid and cautiously extracted it, stating that he made sufficient traction to lift the lid well away from the globe. In a few hours the lid became much swollen, but the pain experienced at first had disappeared. Before retiring for the night he began gentle massage of the lid, stroking it horizontally with his finger. The edematous condition was by this means much reduced in a short time. While thus engaged in stroking the lid he suddenly experienced intense pain in the eye as if it had been pierced by a sharp instrument. The suffering was very severe, and he passed a wretched night, constantly feeling "something in his eye."

The next morning, the trouble continuing, he came to me for relief. Upon examination of the lid, no opening could be made out where the sting had penetrated, and a minute inspection of the conjunctival surface with a good glass failed to reveal any foreign substance. Cleansing the lid thoroughly and carefully inspecting with a lens under strong light, a minute dark point was made out about the center of the lid. Feeling that this might be the point of the sting, I had recourse to several expedients for its removal, but without success. Finally, with a fine knife, I succeeded in cutting down by the side of the body and tilting it out. Examination with a one-fifth inch objective confirmed my opinion that it was the point of the bee-sting. The accompanying illustration is made from its appearance as observed under the microscope.



The barbed formation of the point explains how, under the stroking with the finger, it was forced through the dense tarsal cartilage and against the cornea of the eye.

Schnitzler, founder and director of the General Polyclinic of Vienna, and Professor of Diseases of the Throat and Chest, died of erysipelas on May 2d, aged fifty-eight years.

MEDICAL PROGRESS.

Profound Opening of the Trachea for the Removal of a Foreign Body.—Stickler (*Medical Record*, vol. xliii, No. 17, p. 541) has reported the case of a child, aged three years, with membranous croup, in which it became necessary to open the trachea just below the thyroid isthmus. Everything went well until, while an attendant was attempting to cleanse the trachea with a probang, a bit of gauze that was insecurely fastened became detached and at once passed into the left bronchus. The breathing immediately became labored and the child cyanotic. The child was inverted and other means were employed to dislodge and remove the foreign body, but to no avail. The tube was removed, and, the trachea being grasped on either side by forceps, the opening was enlarged and the trachea was elevated by lateral and upward traction. The soft tissues were then divided in the median line down to the sternum and exposing the anterior surface of the trachea. Bleeding vessels were at once seized with forceps. With the index finger as a director and guide, the trachea was divided anteriorly down to its bifurcation. The little finger was introduced first into the right and then into the left bronchus, but the gauze could not be felt. By means of a pair of forceps with angular blades, however, the plug of gauze was, after one or two attempts, successfully removed. The breathing at once became easy and the cyanosis subsided. The margins of the tracheal and superficial wounds were brought together by sutures, the tracheal tube was re-introduced, and the child was treated as it had been before the accident.

The Self-regulation of the Heart-beat.—At a recent meeting of the New York Neurological Society, Dr. S. J. Meltzer maintained that the heart contains within its anatomic substratum two antagonistic functions, that of contractility and that of inhibition. These belong to the heart itself, and not to the endings of the peripheral nerves. By any stimulus that may be applied to the heart, directly or otherwise, both functions are affected simultaneously. During each systole a sufficient degree of pressure is developed to stimulate mechanically both functions at once, but during the stimulation the inhibitory effect prevails, and the heart must relax. With the relaxation the stimulation subsides, to be followed by a short period of the inhibitory after-effect, winding up as a diastolic pause; after which the after-effect of the function for contraction makes itself manifest, which means that a contraction of the heart must take place. This contraction would last many minutes if the whole after-effect were allowed to wind up; but as the contraction means a new systole and a new stimulation, it is then cut off by a newly aroused inhibitory effect; therefore, instead of a prolonged contraction, a new cycle of relaxation, diastolic pause, and a consequent contraction take place. In other words, the consequence of each contraction is a cycle of relaxation, diastolic pause, and contraction. Thus each heart-beat generates its subsequent diastole and systole, and it may therefore be said that the beats of the heart regulate their own rhythm.

Symmetrical Gangrene in an Infant.—At a recent meeting of the French Society of Dermatology and Syphilography,

MENDEL (*La Médicine Moderne*, 4e ann., 29, p. 255) presented an infant, fifteen months old, in which at the age of eight months gangrene of four toes of the right foot suddenly developed; forty-eight hours later the great toe of the left foot was affected similarly. In the course of two days more, gangrenous plaques appeared upon the dorsal surface of each hand, and finally upon each cheek. The affected parts were black, dry and hard. The child appeared to be in pain as the gangrene made its appearance, but not subsequently. At the end of three weeks the gangrenous parts were thrown off, leaving ulcerated surfaces. Cicatrization was not complete before the lapse of two months. The nails and a portion of the terminal phalanges of the third and fourth toes were lost. The nails of both great toes were lost and cicatrices marked the site of the lesions upon the hands and cheeks. During six weeks there was no recurrence, but when the child was exposed to cold, its hands, its ears, and its nose became livid; at a more moderate temperature the livid parts became cyanotic and soon resumed a normal color. At the age of fourteen months, the child seemed to be suddenly seized with pain and it was observed that a black, rugous spot appeared upon the pulp of the right great toe, which underwent a gradual change of color to brown, and desquamation of the cuticle took place. The child appeared to be perfectly well in all other respects.

Precocious Pregnancy.—GODSON (*British Medical Journal*, No. 1684, p. 743) has reported the case of a girl, fourteen years and seven months old, who had never menstruated, but was pregnant eight and one-half months. The girl was small but well developed; the external conjugate measured seven inches, the circumference midway between the iliac crests and the trochanters of the femora thirty and three-quarters inches. The vertex presented; the position was the right occipito-posterior. The first stage of labor was protracted; the second was terminated by the application of the forceps. The child was a well-developed female, weighing seven and three-quarters pounds. Parent and child did well.

THERAPEUTIC NOTES.

Iodoform-Amblyopia.—PRIESTLEY SMITH (*Ophthalmic Review*, vol. xii, No. 138, p. 101) has reported the case of a man, thirty-one years old, who presented symptoms of dry pleurisy at both bases, in conjunction with a solid mass in the abdomen, which was thought to be due to tuberculosis of the omentum. During a period of forty-one days the treatment consisted in the administration of iodoform, at first two grains being given three times a day, and the dose being gradually increased until, during the last ten days, four grains were given eight times a day. Altogether about 1000 grains were taken. The drug was withheld on account of the appearance of toxic symptoms, including amblyopia, headache, giddiness, faintness, diarrhea, twitching of the hands, and emotional depression. There were a constant taste and smell of iodoform, and the urine was alkaline and deposited triple phosphates. Three days after the iodoform was withdrawn there was marked drowsiness and slight ptosis upon the left side. A day later the drowsiness had given place to irritability, and the ptosis had disappeared. There were numbness and tingling in the legs, and the knee-jerks were exaggerated. Four days after the withdrawal of the iodoform, the refraction was found to be normal and the media of both eyes clear; there was slight haziness at the margin of the disc, but no well-defined papillitis. Vision was much impaired, a well-marked central scotoma, absolute for white paper at or near the fixation-point, being present in each eye. Seven days after the withdrawal of the iodoform the haziness of the margins of the disc was rather more pronounced. Four weeks later vision was yet quite considerably impaired, and in each eye was a central color-scotoma with a small absolute scotoma just below the fixation-point. Subcutaneous injections of strychnine were given for a week, and later iron and strychnine by the mouth. The condition of the man, as well as his general condition, improved progressively. Other possible causes than iodoform were excluded.

A Case of Myxedema that Terminated Fatally in the Course of Thyroid Treatment.—THOMSON (*Edinburgh Medical Journal*, No. cdlv, p. 1014) has reported the case of an unmarried woman, fifty-one years old, who for ten years had presented well-marked, but not very severe symptoms of myxedema. For five years the women had been living a quiet life and the disease had progressed but slowly. For many months she was greatly relieved by taking thirty minims of tincture of pilocarpus three times a day. In this way her skin was kept comfortably moist, but the dryness of the skin ceasing to cause any annoyance the medicine was omitted; so that for some years the woman had had no special treatment for the myxedema. Dyspeptic symptoms, with constipation and hemorrhoids, with chilliness and a distressing feeling of weakness and disinclination for exertion, persisted. On one occasion the woman had been seized with severe pain in the precordium, extending down the left arm. This recurred from time to time in varying intensity. Treatment with the thyroid gland of the sheep was instituted, at first a quarter of a gland and soon a half of a gland being given, twice a week. Nitro-glycerin (mj of a 1 per cent. solution) was also administered for the relief of the paroxysmal pain. Notable improvement in the woman's condition took place, but upon attempting to sit up in bed on one occasion she suddenly fainted and died. At the post-mortem examination the cerebral arteries were found to be atheromatous. The pituitary body was enlarged and firm and its fossa deep. The thyroid gland was flabby and of diminished volume. The thymus was wanting. The heart was in a condition of advanced degeneration. It is pointed out that while the state of the heart-muscle was sufficient to account for the fatal syncope, the treatment may possibly have had some influence in hastening the fatal issue.

For the Painful Constipation of Plumbism.—

℞.—Podophyllini
Ext. nucis vomicæ } . āā gr. iij.—M.
Ext. belladonnæ

Ft. pil. no. x.

S.—One twice or thrice daily.

The Practitioner.

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SATURDAY, MAY 27, 1893.

CYTOTAXIS.

MANY investigators—LEBER, BUCHNER, MASSART, BORDET, GABRITSCHEWSKY—have sought to explain the phenomena exhibited by the colorless corpuscles of the blood as due to what they have named chemotaxis. The leukocytes, it is said, are attracted by certain chemical substances held in solution in the blood (positive chemotropism or positive chemotaxis), or are repelled by other substances (negative chemotaxis). It is even contended that the phenomena of inflammation and suppuration are chemotactic in essential character.

This word-coinage is to be criticised, as so many others have been proved criticisable, on the simple ground that it is unscientific. It pops down upon the facts with a theory as to the causes of the phenomena in question, implicate in the word itself. We never seem to tire of making false deductions and assumptions, of incorporating our preconceived theories into our nomenclature, and then having no end of subsequent trouble to undo our bad work and unlearn our false learning. A word once raised is like an evil spirit, "it will not down," but remains despite our exorcism, to disturb our peace and warn us—vainly, alas!—against unjustifiable assumptions.

The criticism of the word *chemotaxis*, to which we refer, applies to the unwarraranted assumption of chemical agency as the sole one to explain the activity of leukocytic functions. Many physiologists desire to explain vital phenomena, as due to chemism, osmosis, mechanical influences, etc., and in their haste to impress that aspect upon the attention, they incorporate it into words which do violence to the facts. There follows a growth of facts, a largeness of perception of the reach of facts, until it is found that the word and the theory are no longer able to contain the facts, which proceed to burst through the bounds set to them, disrupting the philologic and theoretic barriers foolishly made for them.

There are many possible methods of explaining cellular function besides that of chemical action, and all careful investigators are convinced that it is highly unscientific to presuppose the theory of chemical forces as sufficient to account for the phenomena of living cells. Thus HALLIBURTON[1] says: "The chemical operations performed by the living cell cannot be imitated in the laboratory or explained by any known chemical laws." EWALD[2] has lately positively demonstrated that the mechanical processes of filtration and diffusion do not suffice to explain diffusion, and that we must accept the existence of a peculiar activity of the cells. Sections of the heart containing no ganglion-cells continue for a time to beat rhythmically, and muscles may make spontaneous movements, and may lengthen on stimulation. Finally, note EWALD'S assertion[3] that the study of the stomach "has been undertaken with too many physical propositions, whereas here, as in the digestive tract, biological laws are more important." As it has elsewhere been said: "The building, nutrition, and action of a cell from its inception to its death is inexplainable by the action of mechanical (or chemical) forces alone."

The physiologic unit is the cell—of this there is no longer room for discussion—and, thanks to VIRCHOW, the correlate is quite as firmly established as an axiom of pathology: all disease is finally and in the last analysis disease of the cell. Why, then, not build our theories and shape our nomenclature into conformity with these facts? Every -pathy is at bottom a trophopathy and a cytopathy.

We need a general word that shall express the selective and specific activities of cellular function without doing violence to present knowledge of

[1] Handbook of Chemical Physiology and Pathology, p. 210.
[2] Klinik, etc., I Theil, 3 Auflage, S. 61, 208, et seq.
[3] Diseases of the Stomach, p. 363.

those facts, and without the introduction of any subtle or unconscious theory as to the explanation of those facts. The word should be sufficiently colorless to admit of any adjustment to future explanations—chemic, biologic, electric, idiopathic, or heteropathic—that may come to be acknowledged with the advance of science. Chemotaxis implies one method of causative agency—the chemic, which is not only not proved, but, according to clear testimony of experts, is already disproved. We may not, at least more than in part, explain the specific difference of activity of cells as due to chemism. Something more is needed to tell us why the secreting cells of the liver, the kidney, the stomach, the parotid gland, etc., etc., all drawing their supply from one fluid, should pour out such different products as they do. All that we can say in presence of the mystery is that in some way or other it is the cell itself that is the chief agent in the matter. To express this fact, or aspect of the fact, some such coinage as *cytotaxis* may prove convenient and serviceable. For those who look upon the cell as a mere tool or agent of a general force, or intellectualized energy—that which we call life—a unitary and coördinating purposive power marshalling cells into organs, and through manifold means binding them to a common end, the word *biotaxis* may seem more in correspondence with the indications of facts. The Greek word, τάξις, had its chief use and significance as the arranging and ordering of an army, the putting into place of the individual soldiers, the arranging and deputing of each and all to specific and varying office; but the whole coordinated into effective and harmonic function by the general in command, and by the τάξις that united all elements into a unitary organism. It is something very like this in method and result that we find in the cytotaxic or biotaxic ordering of the physiologic organism, and we express a large fact, whilst not compromising future science by our nomenclature, when we say that the specific activities of the leukocytes and tissue-elements are due to cytotaxis or biotaxis.

For those who deny a specific life-force, and attempt or desire to explain all vital processes as due to mechanic or chemic reactions, the term biotaxis will possibly be rejected, but the term cytotaxis should be welcomed even by them. Cellular function may at some future time be explained as due solely to chemic agencies, or to electric, or to biotic, or to a combination of two or of many agencies. The word cytotaxis does not prejudice future scientific results; but in the meantime it locates the modifying mechanism where it belongs —in the cell.

THE ETIOLOGY OF GENERAL PARALYSIS OF THE INSANE.

A CONSIDERABLE number of cases have now been recorded in which both the symptoms of general paralysis of the insane and those of posterior spinal sclerosis were present, and in some of these cases the accuracy of diagnosis was confirmed by post-mortem examination. This association, though perhaps not frequent, suggests that there may be some close relation between the two diseases, and one writer has even gone so far as to describe general paralysis as but a cerebral form of posterior spinal sclerosis. Both are practically incurable diseases; certainly, little is to be expected from medicinal treatment. It is, therefore, of the highest importance to recognize their causes, so that measures directed to their prevention may be adopted.

It can be accepted as demonstrated that, of the factors that enter into the causation of posterior spinal sclerosis, syphilis is more common than all of the others together. The likelihood of a similar etiology for most cases of general paralysis of the insane furnishes an additional bond of union between the two diseases.

PIETERSEN (*Birmingham Medical Review*, vol. xxxiii, No. 176, p. 193) makes an interesting and valuable contribution to the etiology of general paralysis of the insane, considered from the clinic, statistic, and pathologic point of view. Of the many factors assigned as causes, including worry, anxiety, mental and physical overwork, emotional disturbances, alcoholism, sexual excesses, venereal diseases, insolation, traumatism, febrile conditions, etc., he shows that none plays so prominent a part as syphilis. If all of these influences acted as causes, the disease would certainly be more common than it is. Some, no doubt, excite into activity an otherwise latent force.

The pathologic changes of general paralysis of the insane (primarily affecting the vessels and secondarily the nervous tissues) practically do not differ from those of known syphilitic origin.

Chronic alcoholism may be attended with symptoms resembling those of general paralysis, but the former are not progressive if the alcohol be withheld, while the latter, once manifested, continue to

a fatal issue. The lesions of chronic alcoholism also most closely resemble those of general paralysis, but in the one condition careful examination shows that the morbid changes fundamentally involve the intima of the vessels, while in the other it is especially the adventitia that suffers.

As to the influence that sexual excess may play in the etiology of general paralysis, it is most likely that this is related to the probability of syphilitic infection.

Upon direct inquiry a history of syphilis will be elicited in the largest proportion of cases of general paralysis. In other cases the personal history will warrant at least a suspicion of syphilitic infection. Besides this there is the circumstantial evidence that the disease is more common in the lower classes of the community than in the better classes, and that males suffer in greater proportion than females.

Instances have been recorded in which general paralysis has been observed early in life in cases of congenital syphilis. Friedreich's ataxia also is by some considered a manifestation of congenital syphilis, and may be conceived to represent the spinal form of a syndrome of which general paralysis represents the cerebral form.

That antisyphilitic medication is capable of accomplishing so little in the treatment, as well of general paralysis as of posterior sclerosis, is to be explained by the fact that the destructive changes to which the syphilitic process has given rise are irreparable; but a knowledge of the etiology places in our hands the powerful safeguard of prevention.

EDITORIAL COMMENTS.

A Four Years' Course in Chicago.—*The Journal of the American Medical Association* thus describes a method of compressing time:

"A system has been adopted in one of the medical schools of Chicago, by which the faculty gives the regular graded course of a major, beginning in September and ending in March, and a minor beginning in March and ending in June. Thus the student receives one and one-half years' instruction within twelve months. The curriculum of the college is arranged as a four years' graded course; by the system of majors and minors the classes are so subdivided that the student is enabled to complete the whole course and to take his degree at the end of three years. Within that time he has taken three major courses of six months each, and two minor courses of three months each, which together equal the fourth major course. The system is a good one, saves time and money to the ambitious and diligent student, and makes of the medical professor a professional teacher."

The Boston Medical and Surgical Journal, quoting the foregoing, asks, "When is a year not a year?" and gives the answer: "When it gets into a medical school."

"Complexion Specialists" in Berlin.—The Police-department of Berlin thus construes its duty to the public, the following notice having been published:

"NOTICE.

"As a cure against the most varied skin-diseases a Mrs. Anna Ruppert recommends her skin-tonic in the daily newspapers. This secret medicine consists of a solution of corrosive sublimate in water, with the addition of some glycerin, and it is slightly perfumed. It is sold in bottles containing about six ounces, for the sum of eleven shillings, while the real value of the contents of each bottle is less than three farthings. The above advertisement is hereby given in order to warn the public.

"DER POLIZEI-PRÄSIDENT."

The End of Homeopathy.—In a paper read before the Philadelphia County Medical Society, Dr. John B. Roberts, with entire sincerity of spirit, indicated numerous points of resemblance between so-called homeopaths and regular practitioners, and points out that the treatment pursued by both is practically the same. If the position that Dr. Roberts takes is the correct one (note well, however, the qualifying *if*), there is no true homeopathy, and those who have designated themselves homeopathists will do themselves credit and increase their usefulness by absolving themselves of all sectarian designation. Under such circumstances we believe that we could bring ourselves to forgive them their little and fading delusion of *similia similibus curantur*.

The Dangers of the Barber Shop.—The report of a case of tuberculosis of the bearded face, will direct attention to the danger of transmission of tuberculosis through the intermediation of the instruments used by the barber. To prevent such an occurrence, each individual should have a separate brush and cup and napkin and razor. If one razor is used in common it should not again be used before having been placed for a short time in boiling water and dried, while persons who present themselves to the barber with diseases of the bearded skin should be advised to consult medical men.

Scholarships to Medical Students.—In order to encourage graduates of literary and scientific schools to undertake the study of medicine, the College of Physicians and Surgeons, of Chicago, offers ten scholarships, each of which is valued at $100 a year, for three years, to such applicants as present evidence of the best qualifications for medical study.

The University of Vienna has been particularly unfortunate of late in losing some of its ablest professors by death. Within a short time there have died Meynert, Kohler, and Kundrat; and, last of all, Schnitzler, who, though not directly connected with the University, did much for medicine and humanity in Vienna.

The Medical Examiners Bill has been signed by the Governor of Pennsylvania, and future generations of quacks and incompetent physicians must look elsewhere than in this State for prey and sustenance.

SELECTION.

MILK-INSPECTION IN CHICAGO.

THE milk ordinance, under which the division is operated, is unusually good; in addition to the implied inspection, sanitary inspection is explicitly considered—a part that is omitted in the ordinance of many cities. We are very near Denmark, and more particularly Copenhagen, in the value and completeness of this ordinance.

Professor E. B. Stuart is chief of the division, and he is assisted by nine inspectors. There is an office, a laboratory, and several horses and wagons for the use of inspectors. When it is known that 125,000 gallons of milk are brought into the city daily, it is clear that the division is none too large to regulate the milk-business of Chicago. There has been no opposition to inspection. In only two instances has the taking of samples been refused. Most of the dealers look upon the department in the right light, and are ready to conform to its requirements, but they are always anxious that the regulations shall be general.

There are now being collected from eighty to one hundred samples a day. These are analyzed from a chemical, biological and microscopical standpoint. The sample bottles that are used hold half a pint, and the men take samples from wagons, trains, or stores, and bring them immediately to the laboratory. If, upon analysis, these samples are found to run below grade—the grade for fats being 3 per cent. of the total weight of the milk—another sample is taken from the same place, and if this is also below grade, a sealed sample is taken. Upon the analysis of this sample will depend the bringing of a suit against the dealer. Thus far thirty or forty suits have been entered.

Something may be said in regard to infant food, as the question of slop-feeding brings one close to it. Milk for infant food is one of the most important parts of milk-inspection. In Denmark an additional grade of milk is sold that is called whole milk. This is the milk taken from a selected cow known to be perfectly healthy, and after being drawn it is filtered and delivered, surrounded by ice. The cost of this milk is about twice as much as the ordinary grade. The milk that is sold in Chicago as pure milk is properly half-skimmed milk, as it rarely happens that some of the cream has not been removed. It is true that two of the largest Chicago firms are now prepared to deliver a specially selected milk for infant food. Beyond this whole milk, probably the best food for infants or the sick room is half-condensed milk. This milk has simply a portion of the water removed from it by evaporation in a vacuum. It is largely used in the East, and is prepared in this city by one or two firms. There is nothing added to it, and nothing taken from it beyond the water. The amount of casein and salts is thereby increased, and bacteria find it more difficult to grow in it. When water is added, normal milk is obtained.

The position that the milk department occupies toward the public is of some importance, as well as its relation to the milk-dealers. It should not be the intention to hinder men in their business, but on the other hand, in the interest of the public, the department should preserve a standard all over the city, and see that the milk delivered is clean and wholesome. In addition, it should arrange for analyses of samples that are suspicious, and such as may be desired by the consumer.—DR. ADOLPH GEHRMANN, in *Chicago Medical Recorder.*

SOCIETY PROCEEDINGS.

AMERICAN GYNECOLOGICAL SOCIETY.

Eighteenth Annual Meeting, held at the College of Physicians, Philadelphia, May 16, 17, 18, 1893.

(Continued from p. 560.)

ON the evening of May 16th, DR. THEOPHILUS PARVIN, of Philadelphia, delivered the President's Address. Referring to the wisdom of the organizers in naming the Society the Gynecological Society, he said that gynecology is practically synonymous with obstetrics.

He pointed out that although the Society is named an American Society, it has not a single member from South America, and there is but one member outside of the United States.

He contended that too many papers are written on purely surgical matters and that more should be presented on obstetrics. Physicians should not be too much elated over successful surgery. They should explain "how not to do," as well as how to do.

SECOND DAY—MAY 17TH.

DR. S. C. GORDON, of Portland, Me., read a paper on "The Dangers and Complications of Uterine Fibroids." He stated that the number of operations for the cure of fibroids is certainly indicative that the condition is not a simple and uncomplicated one. Hysterectomy may be made equally as safe as ovariotomy, and constitutes conservative surgery in these cases. Failure to operate has caused untold suffering and death. Hysterectomy is much preferable to ovariotomy for the cure of fibroids and should be performed in the early stages.

The most conservative are agreed that hysterectomy should be performed in cases of rapidly growing fibroids, at or near the menopause, when the bleeding cannot be relieved, when there is salpingitis, ovaritis, or cystic degeneration of the fibroid; but the same men do not perform the operation early, but let the case go on, suffering, until it has reached an advanced stage, when complications exist and the chances of success are diminished. The physical suffering and the danger of the complications that are almost sure to arise, more than counterbalance any danger from the operation, and in many cases the patient has suffered so much that she is willing to take the risks. If the cases are operated on early, there is relief of suffering; the number of deaths from which fully equals that of those following operation. In some neglected cases sarcomatous degeneration takes place. In some cases fibroids have begun to increase in size after the menopause.

DR. MATTHEW D. MANN, of Buffalo, read a paper on "The Operative Treatment of Uterine Fibroids," in which he expressed doubt that the removal of the ovaries and tubes, with a view of arresting the growth of fibroids, is a success; menstruation will cease, but the

tumor continues to grow. He has operated on sixty-four cases, with two deaths, one of which was due to disease of the kidneys; the other was due to septic peritonitis; there was great difficulty in applying the clamp, and the stump sloughed. He has performed total extirpation, after the method of Dr. Polk, fifteen times (three times for carcinoma), with one death. The rapid convalescence of these cases is remarkable; some would be ready to sit up at the end of a week, if permitted. In one case, the method of Dr. Benkert was used, but the tightening of the clamp every day caused so much pain that she would tremble with apprehension in anticipation of the procedure, and the convalescence was very long. In these cases drainage should be provided for. There is greater danger than in an ordinary celiotomy, in which the vagina is not opened; and, although antiseptic injections may be used, it is difficult, if at all possible, to render the tissues aseptic. Dr. Mann has not been a strong advocate of the drainage-tube, and does not employ it as a rule. He does not like the operation of removing the uterus *per vaginam*, as his experience has been limited, but sad; the two cases thus operated on died of septic peritonitis, the last one being a strong healthy woman.

The indication for operation is the presence of a fibroid (no matter of what size) that is causing suffering —and no one but the patient can decide whether or not there is suffering—or that is sloughing.

DR. CHARLES M. GREEN, of Boston, read a paper entitled "Puerperal Eclampsia: The Experience of the Boston Lying-in Hospital during the Past Seven Years." He pointed out that the management of puerperal eclampsia varies as it occurs before, during, or after labor. In the treatment of ante-partum eclampsia, especially if the child is not viable, an effort should be made to arrest it without ending the pregnancy; and if the bowels and skin respond promptly, there is a hope of success. Anesthesia should be employed to control the seizure; when there is renal insufficiency, ether is preferable to chloroform, although the latter is supposed to be safer. When the kidneys are diseased, chloral hydrate, per rectum, may be used. Morphine is not approved of. The action of the skin should be stimulated by the hot bath, and the administration of one-sixth of a grain of pilocarpine, guarded by a little brandy. Should the skin not respond, elaterium or croton oil may be employed to act on the bowels, and the heart is to be supported. Bleeding is not to be used in any case. When it is considered necessary to deliver, manual dilatation may be resorted to, or the hydrostatic bag may be employed, and if necessary multiple incision of the cervix may be practised. If the child is viable, there is less hesitation in obstetric interference. There were thirteen cases of this class under observation, of which 69 per cent. were fatal.

In intra-partum eclampsia, or that which occurs during parturition, labor is to be aided; and after delivery, chief reliance is to be placed on chloral and pilocarpine, guarded by stimulants. In eight cases of this kind the infantile and maternal mortality was 25 per cent.

There were fifteen cases of post-partum eclampsia; one of the mothers and two of the fetuses died (one of these on the third day, of cerebral hemorrhage). There is reason to believe that in these cases post-partum hemorrhage is frequent, although no systematic record was kept.

The prognosis in any given case depends upon the time when the attacks occur, upon their severity and their frequency. Eight children were born alive after an average of 3.9 convulsions and two after 5.3 convulsions.

DR. BUSEY, of Washington, expressed the opinion that there should be little or no mortality in puerperal eclampsia in private practice. If he has charge of the case from the outset he has no eclampsia. In hospital practice, however, the cases are advanced before they come under observation, and then there is no preventive treatment. The first symptom is renal insufficiency. The urine of the gravid woman should be examined at least once a week. In nearly all cases the attacks can be prevented. While venesection as a therapeutic measure in these cases is not often advantageous, it is not to be totally disregarded, as it has been practised with considerable success.

DR. REYNOLDS did not think that eclampsia can always be avoided in private practice. A woman under his observation, seven months pregnant, whose urine was examined frequently and showed nothing abnormal, was one night during sleep seized with convulsions. Deep coma developed. Every known remedy was used, including venesection, but the woman died in ten hours. It is difficult to see how preventive measures are to be adopted in the absence of symptoms. In the case referred to, the urine was examined the day before the attack. It was Dr. Reynolds's experience that post-partum seizures are mild, intra-partum more dangerous, and ante-partum extremely so.

DR. E. P. DAVIS, of Philadelphia, said that the urine should be examined for the quantity of urea, and when this falls below 2.5 per cent., prophylactic measures should be instituted. In treating these cases, when pulmonary edema is threatened, atropine has been used to decided advantage. Calomel, which is a diuretic, will also in some cases prove of value.

DR. GREEN maintained that eclampsia can be prevented in many cases by prophylactic measures, for the application of which there is no opportunity in hospitals. He has encountered no case in private practice. Patients are advised to inspect their urine at least once a day, and when it is highly concentrated to advise their physician. Highly acid urine has an irritating effect on the kidney.

The discussion of all of the papers on Fibroids was opened by DR. MUNDÉ, of New York, who has performed hysterectomy in some eighteen cases. About 10 per cent. of the cases warrant such an operation—that is, when the tumor cannot be removed by the vagina, and when it is extra-pelvic, so to speak. Dr. Mundé disagreed with Dr. Gordon most emphatically in his advocacy of hysterectomy for every fibroid of the uterus, considering such practice most reprehensible.

DR. POLK, of New York, agreed with Dr. Mundé, so far as the small growths are concerned, as a rule, but there are some of these that are very painful. In all cases in which fibroids cause symptoms, the patient has the right to demand their removal; so that the small fibromatous uterus should also be removed, if it inconveniences the woman. Dr. Polk placed himself with

those who believe in total extirpation of these growths. Some can be removed by enucleation, but there are many cases in which total extirpation of the uterus is demanded. Some think the ideal operation is to leave a part of the cervix, so that the floor of the pelvis may remain intact; but it does not appear that there is anything in favor of the operation, while it is incomplete, and requires a much longer time for convalescence.

DR. KRUG, of New York, said that there are many fibroids that do not require any surgical intervention, but those that do will reach more than 10 per cent. No woman should be denied the benefit of the surgeon's skill, when it is demanded. Dr. Krug expressed himself as in favor of total extirpation.

DR. JOHNSTONE, of Cincinnati, stated that he has operated after the method of Bantock, the carrying out of which occupies less time than in the case of the method of Baer, and there is complete control of the hemorrhage by tightening the wire; and, although it is followed by a longer convalescence, it is the better, as it does not require the length of time in operating, or the handling, while the peritoneal cavity is completely shut off and there is no danger of infection. The removal of the appendages is not certain to arrest either hemorrhage or growth.

DR. JOS. PRICE, of Philadelphia, said that his experience with hysterectomy has been large and varied. He has found that the removal of the appendages for small multiple fibroids is a valuable procedure, simple, safe, quick, and with results about perfect. He felt that he should have to give up his work if he did not drain; he values drainage above all other means for saving patients. The cases he encounters are rarely simple, but usually well advanced.

DR. FORD, of Utica, expressed the view that the operations done in the larger cities are not as successful as they appear; for it is not possible to follow the cases and learn whether they continue well or not. He does not believe that small fibroids that do not cause the patient to go to bed, and prevent the performance of her duties, warrant surgical interference. They may be relieved in other ways than total extirpation. Galvanism is of value. Dr. Ford always uses a clamp for large fibroids, and always provides for drainage.

DR. WILEY, of New York, expressed the belief that the point has not yet been reached at which it can be said that any one operation is the best for all cases. He removes the entire uterus in many cases, and in others leaves a part of the cervix. It is not well to remove the appendages for a fibroid smaller than a fist. In the event of hemorrhage, curetting the uterus will usually control it, and the fibroid is watched. Dr. Wiley has tried electricity, but without benefit.

DR. MCGONEGAL held that drainage should be used.

DR. DUDLEY, of Chicago, advocated leaving a portion of the cervix. Drainage is necessary when the fibroid is so large as to produce a certain amount of peritoneal irritation and oozing.

DR. WATHEN, of Louisville, stated that one of the dangers of leaving the cervix—pus—may be prevented by careful antisepsis.

DR. NOBLE, of Philadelphia, said that he had removed the ovaries in sixteen cases for the cure of fibroids, with success. He has also successfully performed four hysterectomies. Of the first 150 cases operated on he drained 140. The question of drainage in hysterectomy is to be decided as the tubes are diseased or not, or as septic material is present in the pelvis or absent, or as hemostasis is perfect or not.

DR. GORDON, of Portland, stated that when a patient complains of symptoms that may be ascribed to the presence of fibroids in the uterus, he operates. The complete removal of the uterus is the ideal operation. Drainage is seldom employed. Dr. Gordon has no faith in electricity in the treatment of fibroids, and Apostoli only claims relief for symptoms.

DR. MANN, of Buffalo, held that the little piece of cervix left is of no use, and serious harm may result from it. Carcinoma may form in it. He favored the use of drainage.

DR. W. M. POLK, of New York, read a paper entitled "Operations on the Uterine Appendages, with a View to Preserving Menstruation and Ovulation." He held that that operation which will restore health and life to the patient is to be performed, and asked if the indications can be met without sacrificing menstruation and ovulation. These functions are aids rather than hindrances to female life, and women are better both mentally and physically for them. The appendages should be removed in cases of ovarian tumors, carcinoma, salpingitis; the minor operation is indicated in cases of simple ovarian cysts in which some of the organ remains, and in case of hydrosalpinx and hematosalpinx, and, possibly, hematoma of the ovary.

Some of the procedures suggested here have been practised on a series of eighty cases (some seen six months and two years after the operation), with good results. When the tubes were removed, the ovaries were left; there has been a tendency to menstruation and epistaxis, but no untoward symptoms; in the cases in which there were dysmenorrhea and excessive menstruation, these were due to the condition of the endometrium, and indicated curetting at the time of operation.

Menstruation being a physiologic function, women, as a rule, are better for its maintenance, and the force of this assertion increases in direct proportion with the distance from the menopause; and in order to preserve the function, minor discomforts may be suffered by the patient without risk. An ovary or a tube may be operated on to the promotion of childbearing. This assertion is based on four cases in the series of eighty, in one of which the woman, aged twenty-two years, married three years, had been pregnant twice, and had aborted at three months; her health was good until a year ago, when she had a foul-smelling leukorrhea and pelvic pain, and menstruation being painful and profuse. Both tube and ovary of the right side were removed. Six months after the operation menstruation occurred normally, and two years later the woman was delivered of a healthy child. The left tube and ovary were normal.

In another case a small ovarian tumor, a hematoma, about the size of a lemon, was removed, together with the left tube. On the right side there was also a small hematoma, which was treated by exsection, leaving about one-third of the ovary and the tube. The patient is now three and one-half months pregnant. Two other cases of a similar kind were reported.

Disease of the appendages does not always demand

radical removal; certain conditions permit partial removal. If there is pus, the tube should be removed. Cysts of the ovary do not indicate removal, if they are not general throughout the organ. The tube whose outer end is closed may be opened. Adhesions do not demand removal, unless the appendages are greatly diseased. It is of the utmost importance to treat the uterus for any endometritis.

DR. CURRIER, of New York, stated that there are many women who suffer greatly from menstruation and are better off without it, yet in the main he agreed with Dr. Polk's proposition.

DR. EDEBOHLS, of New York, considered it questionable whether or not it is worth while to leave a portion of an ovary to preserve the femininity of the patient, if to do so is at the risk of disease. He has removed the ovary and tube on one side for ovarian cystoma, and in some cases the patients bore children.

DR. WILLIAMS, of Baltimore, related that he had received a large number of ovaries and tubes from different operators for examination, and many of the operations seemed unjustifiable. In five per cent. of the cases there was no anatomic ground for it from a pathologic standpoint. It is not well to remove small cystic ovaries, but puncture will serve every purpose. It is desirable to preserve menstruation.

DR. WATHEN, of Louisville, indorsed nearly all that Dr. Polk had said. Ovaries and tubes that are not diseased are not removed. Some women become seriously disturbed after these operations, especially at the menstrual epoch, and it is sometimes a question whether or not they should be sent to an asylum. Dr. Wathen has taken out one ovary and left both tubes.

DR. MANN, of Buffalo, said that he had successfully performed several operations in which a portion of one ovary was left and the other ovary and both tubes were removed.

DR. PRICE, of Philadelphia, stated that in several cases he has punctured small cystomata of the ovary, with good results. Many cases in which only portions of diseased appendages are removed will return for treatment, as the procedure is incomplete surgery. It is proper to preserve healthy, but not diseased, tissue.

DR. EDWARD P. DAVIS, of Philadelphia, reported "A Case of Inversion of the Uterus." The patient was a colored woman, twenty years old, previously in good health. The heart and kidneys were normal. The fetus was in the first position; the head low in the pelvis; considerable resistance was offered by a rigid and small canal. The pains were weak and not sufficient to cause much disturbance; quinine and whiskey were given. The forceps was applied, and the head descended under moderate traction. The instrument was removed, but there was no further progress. The forceps was reapplied, and five hours after the rupture of the membranes the head was delivered and the body followed. On examination the fundus of the uterus could not be felt in its usual situation, but there was an indentation, a cup-shaped cavity at the top. Slight traction was made on the cord, and the placenta was delivered. The uterus was inverted, and the patient lost several ounces of blood. The shock was very great. Ether and whiskey were given subcutaneously; pressure was made on the constriction-ring by the hand formed into the shape of a cone. Artificial respiration was resorted to, and strychnine, digitalis, and whiskey were given, and electricity was used; but the woman died within twelve hours after the replacement of the uterus, although this seemed to take place without very great pressure being used.

The post-mortem examination showed a splendidly developed body. The brain was normal; the dura slightly adherent; the pia somewhat congested. On the floor of the fourth ventricle was small reddish extravasation about the size of a fly-speck. The basal ganglia and the other parts of the brain were normal. The uterus and ovaries together weighed 12.4 ounces. The contracting segment measured 14.2 cm. from the lower to the upper extremity; the inferior uterine segment was 8 cm. in length. The peritoneum was smooth and shining on the posterior surface of the upper segment, but upon that of the lower segment there was some extravasated blood.

The treatment of recent inversion consists in prompt replacement; the constriction-ring must be distended, and the fundus lifted upward and forward into position. The hand formed into a cone is the best instrument for dilating the constriction-ring and replacing the organ. The resistance of the tissues may be lessened by an anesthetic or hot injections. Failure to return the uterus to its proper position justifies its removal.

Death depends upon shock, hemorrhage, or sepsis. Complications may arise, as from making a rent in the vaginal wall.

DR. SMITH, of Montreal, stated that in a case under his observation, in which inversion of the uterus took place after delivery under chloroform, efforts at replacement were made for an hour or two, but the patient rapidly collapsed and died the same day.

DR. LUSK, of New York, related a case which he saw two hours after confinement; when he restored the uterus to its normal position. The woman died two days afterward. She had lost much blood. The force necessary to replace causes a great deal of bruising. Dr. Lusk believes that the uterus should remain inverted until shock is over; and if much force has to be used it is better to take out the entire organ.

DR. DAVIS added that he was careful to use little force; and that, perhaps, he was deceived by the apparent readiness with which the uterus went back.

DR. A. F. A. KING, of Washington, read a paper on "Ovarian Tumors Obstructing Pregnancy." He reported a case of cystic tumor of the ovary. Labor had continued for three days when he saw the woman. On examination he found the cervix distended, and the canal occupied by the tumor, which so filled the cavity that but two fingers could pass to feel the presenting part, which was found to be the face. The tumor was so tense that it could not be determined whether it was fluid or solid. Upon puncture through the rectum, thick, flaky fluid of a white-grayish color escaped. The child was born in fifteen minutes without further aid. It had evidently been dead for some time. There was no trouble with the placenta. After labor the woman was cheerful and in good condition. She got well without complication. When discharged, the tumor could not be found. The woman came into other hands seven weeks later, much changed in appearance, with fever,

cough, and great emaciation. There was evidence of a morbid process in the right lung. The lower portion of the abdomen was distended by a fluctuating tumor. Celiotomy was suggested. A day later, during an examination, the tumor burst, and considerable foul-smelling pus found its way into the vagina. An incision was at once made into the vagina and a gallon of foul-smelling pus evacuated. The woman is now much better; the lung-symptoms have disappeared; the general health is good. The tumor was considered to have been of ovarian origin and to have undergone suppuration.

DR. SKENE, of Brooklyn, related the case of a woman with a distended oviduct occupying the pelvis and obstructing labor, in which he advised aspirating. The tumor was removed after convalescence from the confinement. Dr. Skene favored aspiration through the vagina in cases of ovarian tumor obstructing labor. In case the tumor is not within easy reach, celiotomy offers the preferable course, with removal of the tumor.

DR. REYNOLDS said that he had seen one case in which the tumor occupied nearly the whole pelvis, and which he incised; delivery followed. The removal of the tumor was advised, but not permitted. The case was lost sight of for a time, but was later operated on by another surgeon.

DR. REAMY, of Cincinnati, read a paper on "Membranous Dysmenorrhea." He reported the case of a woman, twenty-eight years old, of nervous temperament, who had led an active life, and who consulted him for painful menstruation; she had first menstruated at fifteen; the period was regular, but always attended with much pain until after her marriage at eighteen. Fifteen months after marriage she aborted at three months, after which menstruation became painful. At the end of a year, large shreds of membrane were discharged with great pain; and when she came under observation complete casts of the uterus were thrown off each month. Microscopic examination confirmed the diagnosis of membranous dysmenorrhea.

The treatment was as follows: the bowels having been evacuated and the vagina and uterus rendered as nearly aseptic as possible, five days prior to the next menstruation the uterus was curetted with a Sims sharp curette, and then with a blunt wire curette to remove anything that might have been left. If, in cases like this, the os is not sufficiently patulous, it must be dilated. After curetting, the cavity is cleaned out thoroughly by swabbing with a small piece of cotton on the end of a suitable instrument, which should be curved like the sound, previously dipped in a 1 per cent. solution of carbolic acid, and this should be continued until there is no discoloration of the cotton; then a stronger solution (2½ per cent.) is used, and the vagina is packed with iodoform-gauze. Fourteen days after the first treatment, the same measures were repeated, except that the dull curette only was used. The mucous membrane removed was now not so large in amount or so thick as in the first instance. Fifteen days after the second curetting a third curetting was practised, and at the end of seventeen days a fourth—the two last precisely as the second. No reaction followed either treatment, which was now discontinued. The curetting was done five days before and five days after menstruation should have occurred. Menstruation is now not painful, and the woman has had three children at term. In two other patients, mother and daughter, the treatment and results were the same.

An element of success in these cases is to repeat the curetting before the membrane has had a chance to regenerate completely; a single curetting is not sufficient.

DR. EMMET stated that according to his experience membranous dysmenorrhea is simply a symptom pointing to derangement of the nervous system. There are few conditions of which the treatment is more unsatisfactory.

DR. CLEVELAND related a case in which he used the sharp curette and packed with iodoform-gauze, and the cure was absolute.

DR. CUSHING said that he had had two cases of this kind, in one of which he was much puzzled as to whether the condition was an extra-uterine pregnancy or membranous dysmenorrhea. He curetted very thoroughly and the woman became pregnant.

DR. REAMY insisted that the uterus should be curetted at least four times, and in some cases more than that.

DR. HERMANN J. BOLDT, of New York, read a paper on "The Operative Treatment of Fibro-myomata." He pointed out that the removal of the appendages is not always followed by shrinking of the neoplasm. Electricity will occasionally relieve the symptoms as far as hemorrhage is concerned, but it does not reduce the size of the tumor. The uterus should not be removed when it is possible to remove the tumor alone; but there are some cases in which this is impossible, and the uterus must be removed. Total extirpation is to be preferred to the supra-vaginal operation, as this is attended with the danger of septic infection and hernia. The chief objection to total extirpation is the long time the operation requires. Another difficulty is in the extreme rigidity of the pelvic floor, which is most marked in the case of small tumors developed in the broad ligament; in these the operation may be begun from below, as in a vaginal hysterectomy, and the vagina dissected from the cervix and the bladder as far as possible to Douglas's pouch; and then the parametria can be ligated precisely in the same manner as in vaginal hysterectomy in malignant disease, except that the operator keeps close to the cervix; when the abdomen is opened the operation is easier. Sometimes it is necessary to distend the bladder with a solution of boric acid, to avoid wounding this viscus. When the tumor is large and the cervix is pulled high up, the operation is a comparatively easy one and the entire operation is done from above. Catgut is preferable for sutures in the parametria, through which it is passed, and made into a loop to prevent slipping.

DR. BAER expressed agreement with Dr. Boldt. Even if a fibroid is not larger than the fist, and the woman wishes operation, it should be done. The uterus might be left if the tumor can be enucleated, but if there are other nodules (and there generally are), there would be a return of the tumor, and supra-vaginal hysterectomy should be performed. This latter operation will take the place of total extirpation, for the reason that the latter shortens the vagina, which is of moment to the married woman. The danger of septic infection in leaving the cervix does not exist; the operation is clean, quick, and smoothly done.

DR. W. T. LUSK, of New York, read a paper on "The Technique of Primary Celiotomy in Advanced Ectopic Gestation." He reported the case of a woman, greatly emaciated, thirty-three years old, who had been married twelve years, had had one child six years old, and no trouble after childbirth. A tumor, resembling a pregnant uterus, was found extending across the abdomen; below, on the right side, being a body resembling a head. The uterine cavity was three inches long. The tumor was attached to the posterior uterine wall and crowded the pelvic space. The history favored extra-uterine pregnancy. The fetal heart-sounds could not be heard. An abdominal incision was made from two inches above the navel to the symphysis pubis. There were numerous adhesions between the intestines and the uterus. The sac originated from the right tube, and had developed between the folds of the broad ligament. On attempting to separate the intestines profuse bleeding took place, which was controlled by ligating the ovarian artery. The walls of the sac were then cut two inches above the uterus and the sac was rapidly enucleated. It was intended to take the sac out entire, but it ruptured, and the bleeding was so great that it was deemed necessary to compress the aorta. The child was removed and lived twenty-five minutes. It looked like a six-months-old fetus. The patient's pulse was rapid for the first two days, and she suffered from tympanites, for which calomel was given. She made a good recovery.

DR. COE, of New York, showed the specimens of a double ectopic gestation, one twelve years after the other; the first ruptured at three months, and the second at four months.

DR. WILLIAMS described the specimens of Dr. Coe. Nearest the uterus was the mummified fetus of twelve years' duration. The sac of a recent pregnancy was also to be seen. The question is: How did the second pregnancy occur with the corpus luteum on the other side? There are two possibilities: one that the ovum passed down the tube through the uterus and past the mummified fetus and lodged beyond, or it may have migrated through the abdominal cavity and have reached the other tube, and not have been able to pass the mummified fetus.

THIRD DAY—MAY 18TH.

DR. H. MARION SIMS, of New York, read a paper entitled, "Hystero-epilepsy; Report of Seven Cases cured by Operation, the Majority by Celiotomy." He expressed the opinion that hyst ero-epilepsy is chiefly due to nervous irritation caused by uterine disease.

The first case was in a woman of thirty, married for four years, in which the first convulsion occurred one year after marriage. Subsequent attacks occurred after every menstrual period. Electricity and many other therapeutic measures had been employed, but without success. The cervix uteri was found to be small and the uterus extremely anteflexed. The uterine canal was dilated to secure drainage, and the uterus restored to its normal position. The hypertrophied uterus soon became reduced in size; and there have been no more convulsions.

The second case was in a delicate, anemic girl of sixteen, who had convulsions daily, sometimes as many as five or six a day. Similar treatment was used as in the first case, with equally good results. The woman married subsequently and became pregnant.

Cases in which there exists a diseased condition of the uterus and ovaries are of more frequent occurrence, and more liable to successful termination by treatment.

The third case was in a woman, aged twenty-eight, who had never borne children, and whose menstrual periods were irregular and accompanied by severe convulsions, sometimes three a day, in which consciousness was lost. The labia were greatly hypertrophied; the ovaries and tubes enlarged, the former cystic. Celiotomy was performed, and seven years after the operation there had been no further trouble.

The fourth case was in an unmarried woman, twenty-six years old, who had an epileptic attack at each menstrual period. The uterus was somewhat enlarged, the left ovary enlarged and cystic. The left ovary and tube were removed. The woman improved rapidly and remained well.

The fifth case was in a married woman of eighteen, whose hymen it was necessary to excise for vaginismus. In the sixth month of pregnancy she was attacked with epilepsy, tore her hair, and complained of pain in the right ovarian region. The right ovary was found much enlarged, dragged forward by the growth of the uterus, and wedged in between the body of the uterus and the abdominal wall. Labor occurred at eight and a half months, but the seizures continued. The removal of two much-diseased appendages was followed by permanent relief.

The sixth case was in a girl of twenty, who had had convulsions in childhood, which returned with the advent of menstruation. An aura was described as arising from the uterus and passing to each ovary. Both tubes were found enlarged and adherent, sensitive to the touch. The adhesions were broken up and the woman was made well.

DR. GORDON expressed a belief that the neurosis is due to disease of the appendages and not to that of the uterus, as prolapse of an ovary with repeated attacks of inflammation, cirrhotic ovary, etc. He has performed several operations for this condition with success.

DR. REAMY stated that there is no doubt that some cases are cured in this way, but he was not willing to authorize the procedure indiscriminately.

DR. FORD said that he has performed several operations of this character; in some instances the convulsions were absent for six months, but returned in a modified form. Some recover entirely after operation, but others also do so without it.

DR. NOBLE stated that he has operated in three cases, all of which were cured.

DR. BOLDT said that some cases are cured, but some are made worse by the operation. It is safe to say that the appendages may be removed when diseased if they cannot be cured in any other way.

DR. DUDLEY stated that if in these cases exploratory incision is made and the appendages are found to be so diseased as to be useless, they should be removed.

DR. JOHNSTONE stated that he has operated on several of these cases for inter-menstrual pain, and all recovered. When the ovaries are found adherent and stretched, the morbid condition should be removed.

DR. ARTHUR W. JOHNSTONE, of Cincinnati, read a

paper on "The Origin of Dermoid Tumors of the Ovary and Testicle," in which he pointed out that ovarian dermoids arise from the ova of the patient and not from any malformation of the epiblast. Dermoids are not found in any part of the ovary where there are not Graafian follicles; thus they are never found in the hilum. Dermoids in the testicle arise also in the semen-forming portion only. Dermoids of the orbit and other cavities are probably due to doubling in of the epiblast, but this is not the case with the ovaries and testicles. In one specimen a well-formed heart was found, and in another a well-formed bicuspid tooth. The condition is probably due to auto-impregnation of an ovum not able to leave the ovary, and cessation of growth.

DR. GARRIGUES stated that he has also noticed that the dermoids in ovaries are found near Graafian follicles.

DR. G. M. EDEBOHLS, of New York, read a paper on "The Operative Treatment of Complete Prolapsus Uteri et Vaginæ." He maintained that prolapse of the uterus is readily and permanently curable by modern gynecologic surgery. The question is: Shall an endeavor be made to preserve the uterus, or shall it be removed? Until it is proved that the results of total extirpation are better and more lasting and not more dangerous, Dr. Edebohls prefers to adhere to ventral fixation as a rule. The conditions are exceptional when the uterus is so large and heavy that it cannot be reduced to approximate the normal size and weight by amputation of the cervix; when there is malignant disease, or when the appendages are so diseased as to call for removal, plastic operations upon the vagina, as well as ventral fixation, are necessary.

The objections to total extirpation are that it is opposed to conservative surgery, while it neither lessens the danger nor simplifies the technique; on the other hand, with healthy tubes and ovaries the plastic operations preserve the function of childbearing. Omitting from consideration the exceptional instances in which total extirpation is required, ventral fixation, with the plastic operations upon the vagina, is the most valuable, and all of the operations should be done at one sitting.

DR. EMMET stated that to cure a case of complete procidentia it is most important to make a diagnosis as to the cause. He has seen but few cases that could not be relieved by plastic operations. In no case has he thought total extirpation of the uterus necessary. Many fail by attempting to get support from the anterior wall. There is great difficulty in elevating the uterus to the proper point where the bloodvessels are given support; if it be lifted too high there is as much disturbance as if it were prolapsed.

DR. DUDLEY, of Chicago, said that he has seldom seen a case of complete procidentia that would not yield to plastic operation; and in these cases there was something in the pelvis forcing the uterus down, as a tumor.

DR. POLK, of New York, said that he has met with many cases that could not be relieved by plastic operation. There are cases in working-women, in which the uterus and vagina are entirely outside, in which the ordinary plastic operations have failed. The condition may be considered as a hernia, and should be treated according to the rules that appertain to hernia.

DR. KRUG, of New York, related that he has performed but one total extirpation for prolapse. It is as necessary to do plastic work on the pelvic floor as it is to hold up the uterus. Total extirpation is only indicated in certain cases; and plastic operation on the pelvic floor, with ventral fixation, is sufficient to control the most desperate cases.

DR. EMMET stated that it is as important to operate on the anterior as on the posterior wall.

DR. BÓLDT gave as a reason why plastic operation so often fails, the fact that the mucous membrane is separated from the underlying tissue. He thinks bilateral colporrhaphy the best procedure.

DR. DUDLEY, of Chicago, said that there are two classes of plastic operations. The first is useless, that which simply narrows the vagina, as the uterus will descend sooner or later. The second changes the angle between the long axis of the vagina and the long axis of the uterus, making it acute; so that the cervix and vagina are forced into the hollow of the sacrum, and the lower part of the vagina against the pubes; and the body of the uterus cannot fall back. This is the valuable operation of Emmet.

DR. SMITH, of Montreal, stated that he has never thought it necessary to remove the entire uterus. He curettes the uterus and repairs the cervix, and then practises anterior and posterior colporrhaphy and ventral fixation.

DR. NOBLE said that he cuts off the cervix as high up as possible, to lessen the size of the uterus; he operates on the anterior and the posterior wall, and in some instances practises ventral fixation.

DR. CHADWICK said that in some old women he has united the posterior with the anterior wall of the vagina.

DR. EDEBOHLS expressed the view that most cases can be cured by the plastic operation.

DR. WATHEN, of Louisville, read a paper on "The Results of Aseptic Celiotomy," in which he stated that he has had no deaths in abdominal and pelvic surgery for two years. He believes that fifty per cent. of the bad results in celiotomy are caused by lack of knowledge of topographic anatomy and the pathologic indications. It is necessary to be able to make a diagnosis as to the cause; and the details should be carefully looked into. Dr. Wathen does not believe that disease-germs are carried into the abdomen by the atmosphere (unless there has been a case of infectious disease in the operating-room), but by the instruments and ligatures, or the hands of operator or assistants. He always operates at 3 P.M.

DR. GORDON held that it is preferable to operate in the morning, as the operator is then usually in much better condition, and the patient does not have so much time to become depressed with the thought of what is to come.

DR. ALEXANDER J. C. SKENE, of Brooklyn, read a paper on "The Pathology and Treatment of Injuries of the Pelvic Floor." He pointed out that, considered as a mechanical structure, the pelvic floor resembles a diaphragm, the structures of which are attached to the bony walls of the pelvis, and which is held at its proper elevation by the levator ani muscle.

Injuries of the pelvic floor may be divided into two classes: First, those that occur in the median line and extend in a direction corresponding with the axis of the pelvis; second, those that occur above the floor itself—transverse internal lacerations.

Injuries in the median line occur in various forms and degrees. All of the tissues, from the posterior commissure to the sphincter ani may be involved. There may also be subcutaneous laceration of the muscles and fascia in the median line, usually limited to the transverse perinei muscles and fascia, and rarely the sphincter.

The second class of injuries includes laceration of the fibers and fascia of the levator ani, which is usually attended by separation of the muscular layer of the vaginal wall from the pelvic floor, and sometimes involves the mucous membrane, and gives rise to prolapse of the vaginal walls, uterus, and vagina. Rectocele is said to follow, but it is thought that the condition is one of prolapse of the vaginal wall, and a varicose condition of the veins between the vagina and rectum, which is within and above the pelvic floor. Sub-involution of the uterus and vagina frequently occurs, with a certain amount of hypertrophy, which accounts for the extraordinary thickness of the walls. After some time atrophy of the vaginal wall takes place, and also of the levator ani.

In the treatment of injuries in the median line extending to the posterior commissure, including all of the tissues of the pelvic floor, Dr. Skene simply removes the scar-tissue and freshens the ends of muscles and fascia. The vaginal wall, which has been attached to the lower angle of the laceration, is liberated and raised up. The lateral surfaces are united with sutures, the upper two or three of which are introduced into the posterior surface of the vaginal wall, uniting the inner surface of the pelvic floor.

In complete laceration, involving the levator ani, the principles of Emmet are closely followed.

Attention was especially called to subcutaneous laceration in the median line, when it involves the fascia and transverse perinei muscles. First an incomplete should be made a complete laceration by dividing the integument down to the upper border of the sphincter ani muscle, and any loose cellular tissue between the integument and the vaginal wall. If the vaginal wall is drawn backward toward the sphincter, the vaginal wall should be liberated and raised to the posterior commissure. If thickened cellular tissue be present it should be trimmed until the fascia and muscle of either side are exposed. The wound is then closed, as in recent laceration, except that the vaginal wall is consolidated by the upper sutures.

In the treatment of transverse internal laceration, Emmet's operation is perfect, except when there is subcutaneous laceration of the floor or when atrophy has occurred, and here a modification is practised. Only tissues enough to liberate the vaginal wall from the floor are removed and reflected upward and backward; then the tissues, down to the median line, are divided, crowding the enlarged vessels and tissues backward toward the rectum, and the vaginal wall is united to the floor of the pelvis with sutures, which bring together the edges of the pelvic floor. By this procedure the muscles and fascia in the median line are restored and the so-called rectocele is disposed of.

In prolapse of the bladder and vaginal walls in injuries of the pelvic floor, colporrhaphy is not satisfactory as a rule, as it favors atrophy and a recurrence of prolapse, unless injuries of the pelvic floor have been cured, and here a restoration of the perineum would accomplish the same object. An attempt is made to relieve the prolapse of the bladder and urethra by uniting the severed muscle-fibers to the sub-pubic ligament.

DR. ROBERT A. MURRAY, of New York, read a "Clinical Report of Cases of Pyosalpinx Treated by Uterine Drainage, with Subsequent Conception."

He contended that it is not always necessary to remove diseased appendages, and related three cases of gonorrheal origin and three of puerperal origin, in some of which, by pressure, he could express pus from the cervix uteri. In treatment, iodin was applied to the vault of the vagina, and hot douches, boro-glycerin tampons, and sometimes Churchill's iodin were employed to prevent pelvic inflammation after dilating, so that the application could be made well beyond the internal os, and that drainage might take place. In many cases the uterus decreased in size markedly, and often there was a profuse whitish discharge, with which relief from pain was coincident. After dilating the cervix the uterus was curetted, as many of the cases had a history of abortion. In some, pregnancy ensued. Iodoform-gauze was not employed. In some of the cases pyosalpinx existed. The cases most benefited by this treatment were those in which the tubes and ovaries were in the normal position. When the appendages were displaced downward and backward in Douglas's pouch, and the whole mass could be lifted by a tampon, tenderness was diminished and mobility increased; but when the tubes were fixed, and could not be lifted by the tampon, and there was occasional leakage, it was advised that the appendages be removed.

Many cases of pyosalpinx are curable without mutilating operations, if treatment with curettage and drainage be instituted.

True drainage of pyosalpinx in the uterus is possible, and does occur, if the uterine extremity of the oviduct is patulous or can be made so.

Uterine drainage and curettage should be practised before operation.

The endometritis, which is often the cause of the trouble and responsible for failure after removal of the appendages, should be intelligently treated.

After pyosalpinx, the tubes and ovaries are not always useless.

If after proper treatment the tubes and ovaries remain bound by adhesions, and are a menace to life and health, the usual radical operation should be performed.

As a matter of observation, there are few cases of puerperal complications due to the presence or results of primary salpingitis.

DR. GORDON stated that he dilates, washes out with a 1:2000 solution of mercuric chlorid; uses a sharp curette, dilating meanwhile; then applies pure carbolic acid and mops out thoroughly; then dilates again, washes out with carbolic acid, and does not pack.

DR. JOHNSTONE stated that in acute cases he recommends palliative treatment entirely; in the subacute and chronic cases only curetting.

DR. EDEBOHLS said that he knows of a number of cases of true pyosalpinx, with pus in the tubes, that have gotten well, become pregnant afterward and gone to labor without complications. It is important to be able to diagnosticate between cases that can be cured without removal of the appendages and those that cannot. The prognosis largely depends on the situation of the tube.

If it is in its normal position, it is possible to drain and cure; if it is prolapsed backward in Douglas's pouch, twisted and adherent, it can scarcely be expected to do so, although it should be subjected to tentative treatment for some time before an operation is undertaken.

DR. NOBLE pointed out that the fact that fluid escapes from the uterus does not imply that it comes from the tubes, as the uterus is able to contain a dram of fluid. In all of his cases operated on for pyosalpinx, there were but two in which the tubes were patulous at the uterine extremity. There have also been two or three constrictions in a tube, so that if one were emptied there would still be others. Dr. Noble thinks that occasionally, though seldom, a tube does empty, and recovery takes place when there is but one sac; but the process is a long-drawn-out and tedious one. The result is a crippled appendage, and often subsequent operation is necessary.

DR. BARTON COOKE HIRST, of Philadelphia, read a paper on "Vaginal Enterocele in Pregnancy and Labor." He stated that vaginal enterocele large enough to complicate labor is very rare. He has been able to find but twenty-seven cases on record. The cause is usually sustained violence or physical shock.

The diagnosis should be easy. The enterocele makes its appearance suddenly, pushes before it the lateral and posterior vaginal wall, and pushes to the outer side the utero-sacral ligaments and makes its way down inside the vaginal wall. There were but two cases of anterior vaginal enterocele complicating labor. If the enterocele is large it may obliterate the vagina, and the rectum may be so pressed upon as to be obstructed. In Dr. Hirst's case there had been no passage for three weeks, and there was marked dysuria and cystitis, with severe attacks of colic. Grasped between the thumb and finger the walls felt doughy. There was no resonance on percussion, but distinct impulse on coughing. Introduction of the whole hand in the rectum has been practised in diagnosis, but is dangerous. Vaginal enterocele has been mistaken for the membranes and punctured; it has been incised for an abscess and cut off for a polyp. It has been mistaken for cystocele, rectocele, inverted uterus, prolapsed vagina, vaginal cyst, etc.

If reducible and not large, and of not too long standing, the prognosis is favorable; if it is irreducible, large, and the presenting part presses the intestines so that the sac threatens to rupture, there may be inflammation and even gangrene. In Dr. Hirst's case the hernia was irreducible, the sac enormously distended during labor, rupture was imminent, and it was anticipated that peritonitis would occur after delivery, but the sac was preserved and there were no untoward symptoms. In one of the cases reported rupture took place, and the woman died on the third day. There is no instance of gangrene reported, although this would seem likely from the enormous pressure.

If the physician sees the patient during pregnancy the enterocele should be reduced by taxis in the knee-chest posture, and its recurrence prevented. Reduction has also been accomplished by systematic purgation. In some cases the sac is adherent to the ring and cannot be returned. It has been reduced by water-bags, tampons, and rest in bed. If irreducible, the bladder and rectum will require attention. In Dr. Hirst's case it was necessary to give an ounce of castor oil and three compound cathartic pills to secure an evacuation, and the bladder was washed out several times a day on account of the cystitis. If the case is seen for the first time during labor, the labor will probably be brought to a standstill. Attempts may be made to reduce it in the lateral posture; if irreducible, the sac should be pushed to one side and the forceps applied. In Dr. Hirst's case there was great difficulty in delivery. Had the patient gone to term, Cesarean section would have been required. If rupture occurs, the intestines should be cleaned, returned to the abdomen, the rent sutured, and drainage provided for. The abdomen should be opened on the first evidence of peritonitis and rupture.

DR. J. W. WILLIAMS, of Baltimore, read a paper on "Calcified Tumors of the Ovary."

He stated that he has received several specimens during the past year that were supposed to be osseous tumors of the ovary, but that proved to be calcified ovarian fibromata. In these cases the ovarian tissue around the area of calcification was not interfered with. Simple ovarian fibromata are very rare, and calcified ovarian fibromata much more so. It is probable that the tumors reported as osseous have been calcified. Osseous tumors may occur, but they are more rare than calcified tumors. Calcification is more or less a conservative process. The process is preceded by necrosis of the affected parts, which is followed by the deposit of calcareous material. Something else beside necrosis is necessary to produce calcification. A certain amount of blood or lymph must reach the part.

The clinical history will not serve to distinguish calcareous fibromata from other solid tumors. They rarely attain to greater size than a child's head. In two cases there was marked dysmenorrhea, probably from pressure. Sometimes there is profuse uterine hemorrhage, purely from mechanical influences.

The diagnosis is usually impossible, for simple fibromata often feel as hard as calcareous fibromata. If by chance the diagnosis is made, removal is indicated.

DR. A. L. SMITH, of Montreal, read a paper entitled "Some Elements of Success in Celiotomy." Inquiry of a large number of operators showed that death following celiotomy was due to septic infection and to peritonitis, chiefly; to shock and hemorrhage, primary or secondary; and in some instances to prolonged anesthesia.

Septic infection may be avoided by careful attention to aseptic precautions. The idea that infection may be contained in the hair and clothing may be abandoned. Dr. Smith invariably uses catgut. He has the legs tied down so that the patient cannot raise them up and embarrass the operator. He does not search for the linea alba. If the incision is made through the rectus muscle better union is secured and there is less danger of hernia. It is probable that mural abscesses are often due to pressure-forceps. Sutures are permitted to remain for a month in order to give the newly-formed tissue in the site of the incision an opportunity to become organized. If the wound is kept dry and covered by a layer of boric acid half an inch deep, union will take place by first intention. Dr. Smith does not sponge the peritoneal cavity, as injury may thus be done. Anesthesia should not be kept up for more than an hour.

DR. BALDY said that he would, if possible, avoid going directly from a case of diphtheria or scarlet fever to perform a celiotomy. He uses silk altogether for sutures. He thinks many of the stitch-abscesses occur from pulling the dirty end of the suture through the suture-track, as he has noticed that when they occur it is two or three days after the sutures are taken out. He does not see why boric acid should be used. He never uses powders, and has never had an infected wound. He cannot see the utility of permitting the stitches to remain a month. He removes them at the end of eight or nine days. Sponging the peritoneal cavity, if properly done, causes no irritation.

DR. R. L. DICKINSON, of Brooklyn, read a paper entitled "Practical Methods in Dress Reform."

DR. CHARLES P. NOBLE, of Philadelphia, read a paper on "The Question of Operation on the Uterine Appendages."

When women present marked symptoms of pelvic disease and are made invalids thereby the physician must examine not only the uterus and cervix but the appendages as well. There are inflammations of the ovary of a chronic character, the only evidence of which is a slight enlargement or a diminution in size, or there may be no recognizable change.

Ovaritis is often of intractable nature and many cases will baffle treatment. The worst cases occur in women inclined to corpulency. When ovaritis resists well-directed treatment for a year or more and life is made unbearable, removal of the offending organ or organs is justified. Dr. Noble has operated fifteen times for the removal of ovaries for chronic ovaritis. When both ovaries were removed, the cure was complete; when one was removed, the cure was not complete. The mortality is said to be greater than in ovariotomy. It is not evident why it should be so, or why a case should ever be lost, unless there is some complication. The general condition of the patient must receive attention.

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Forty-third Annual Session, held at Williamsport, May 16, 17, and 18, 1893.

(Continued from page 558.)

THIRD DAY—MAY 18TH.

DR. W. MURRAY WEIDMAN, of Reading, delivered the "ADDRESS IN SURGERY," in which he discussed the subject of accidents on railroads. He showed that while the treatment is the same as in other surgery, the conditions differ greatly. There are no nurses, no hot water; everything is filthy, even the assistants; and again there is no time in which to prepare the patient. Operation must be performed at once. In many towns there is a small hospital where better conditions obtain; but even this is not available in many instances, as the case must be attended to without removal. Dr. Weidman alluded to the too frequent injudicious employment of the rubber bandage for the control of hemorrhage, in this way, for perhaps a slight bleeding, producing a condition necessitating amputation. Pressure at the seat of injury, ice, hot water, will generally check the bleeding, without the use of the tourniquet. If the part must be amputated, it should be done at once. Recovery from shock cannot be awaited. Stimulation, if needed, by means of whiskey, nitroglycerin, etc., may be immediately instituted; but the useless part should at once be removed. This prevents danger of blood-poisoning, etc.

DR. J M. BATTEN, of Pittsburg, read a paper on "Bright's Disease, especially after Scarlet Fever."

DR. G. E. READING, of Woodbury, N. J, alluded to the failure in such cases to remove the albuminuria, though the flow of urine was abundant. He has found the use of tincture of cantharides, conjoined with diuretics, etc., to rapidly remove this symptom. Nitroglycerin is useful in chronic contracted kidney, in small doses, as rapidly increased as the physiologic symptoms allowed.

DR. CHARLES K. MILLS, of Philadelphia, read a paper on "Insanity and Quasi-Insanity in Children," in which he described certain forms of paranoia, etc., in the young, all of which were not readily cured.

DR. I. N. KERLIN, of Elwyn, and DR. J. CURWEN, of Warren, added the results of their large experience.

The paper of DR. L. J. LAUTENBACH, of Philadelphia, on "Improvement of Hearing after Removal of Polypi and Granulation-tissue from the Middle Ear," was read by title.

At the afternoon session DR. JOHN CURWEN, of Warren, delivered the "ADDRESS IN MENTAL DISORDERS." To attain a clearer understanding of the proper treatment of mental disorders he proposed to consider, first, the bodily conditions that demand attention, and then the influence of the emotions, passions, and affections, as they exert a determining direction for good or evil in any given case. Two general conditions may be recognized—a state of exaltation and a state of depression. The modes of life, the social habits and customs of the community, the attention to hygienic rules, and a variety of subjects that may be classed under the head of peculiarities of physical action, have a greater or less influence in promoting disorder of bodily conditions, and lead gradually to irregular action of the nervous system. Individuals must be treated, not cases. In all cases of great excitement it is important to learn how this may be controlled. If it occurs in a stout, robust man, free purgation may be instituted, as with calomel and Dover's powder at night and an active cathartic in the morning. The first acts on the internal organs and skin, with a peculiar derivative action upon the brain. Afterward a sedative is to be given. Opium is better omitted, on account of its tendency to check the secretions and its special action on the nervous system and brain. The best sedative is a tonic, such as iron pyrophosphate, 5 grains, with a small portion of compound tincture of gentian, three times a day, together with good food, to support the system and supply the waste resulting from the excitement. An occasional narcotic may be required to moderate excitement and induce sleep, as amylen hydrate, paraldehyd, etc. Many use sodium bromid and chloral in full doses, but continued for some time; these often cause the effect that it is designed to overcome (mild excitement, loss of appetite and great nervous depression), which can only be relieved by the withdrawal of the drugs and the substitution of a tonic and nourishing food, beginning with egg and milk and any other food the stomach will tolerate, at first given in small

quantities and frequently repeated, the intervals being gradually lengthened and the quantity increased as improvement manifests itself. Some require close watch in a room; others, regular open-air exercise. Some require no sedative or narcotic, but pure rye whiskey in half-ounce or ounce doses, three or four times a day. Here alcohol acts as a sedative, with a tonic influence, and need only be continued till excitement subsides, and then be withdrawn. After much experience Dr. Curwen has come to the conclusion that gradual withdrawal of stimulants is not demanded. When the case is of asthenic type whiskey in large doses is often used, a pint or even a quart daily, but the system cannot dispose of this, and there results injury to the brain, loss of appetite, etc. Better, careful feeding, moderate exercise, and mild tonics are indicated. Patient waiting brings no loss; the individual must be satisfied to gain slowly relief from a depressing and disheartening condition. The majority of cases now of mental disorder are of the asthenic type. Proprietary remedies must never be used.

DR. T. D. DUNN, of West Chester, delivered the "ADDRESS IN OBSTETRICS." He alluded to anesthetics in labor as demanded. They may occasionally depress and tend to cause hemorrhage, but if used in surgery, why not in obstetrics. Complete anesthesia is not demanded, save for operations. Partial anesthesia aids dilatation, relieves excitement, etc., and lessens the danger of injury to the perineum and cervix. Shock is prevented. Chloroform is preferred. Symphysiotomy has been revived during the past year. It now appears to be on the list of justifiable operations in certain cases. Its future is full of hope. Antiseptic midwifery is now essential, but must not be overdone. The application of a mercurial douche twice a day for four weeks prior to labor is burdensome. Good authorities show extremely favorable results without disinfection. Some think undue interference increases the mortality. The antiseptic treatment of puerperal women can be made both simple and effective. There should be before delivery vaginal injections of simple boiled or borated water; the physician and the nurse should wash their hands with a nail-brush and a mercuric chlorid solution, 1 to 2000. All lubricants must be aseptic. After delivery, vaginal examination and disinfection are ordinarily not required. If portions of placenta remain they must be removed and the tract flushed with antiseptic.

After the reading of the address, Dr. Dunn offered the following, which was adopted:

"*Resolved*, That in the opinion of this body it is the duty of every physician practising midwifery, as far as possible, to surround such cases with the same safeguards as are being used in hospitals."

Papers by DR. B. F. BAER, of Philadelphia, on "Complete Prolapsus of the Uterus and Vagina;" by DR. J. M. BARTON, of Philadelphia, on "Removal of the Appendix Vermiformis," etc.; by DR. E. LAPLACE, of Philadelphia, on "Trephining in Epilepsy," and by DR. H. W. STELWAGON, on "The Increasing Prevalence of Scabies," were read by title.

The President appointed as the Committee on Scientific Business as directed by the amendment to the By-laws: Dr. C. W. Dulles, of Philadelphia; Dr. S. R. Gorgas, Dr. F. Lemoyne, Dr. J. Tyson, and Dr. S. S. Towler.

An amendment to the By-laws was offered that "Any member of a County Society who shall violate any of the provisions of the Code of Ethics, or who shall be guilty of unprofessional conduct, may be tried by the County Society within whose jurisdiction the offence was committed; the trial to be conducted as upon one of its members; he shall be subject to the penalties and have the same right of appeal as one of its members." The consideration of the amendment is deferred for one year.

On motion of Dr. Curwen it was resolved that at the future meetings of the Society the Committee on Arrangements be instructed to have the room in which exhibits are displayed closed during the session of the Society, and that this be printed upon the program.

Dr. J. L. Ziegler, of Mount Joy, asked the rendering of the laws as to the rule for addresses, etc., which were constantly disobeyed.

It was agreed, after some remarks, that these rules should in future be implicity enforced; that objection should be made to all motions for the suspension of the rules, etc.

NEWS ITEMS.

Cantani, the distinguished clinician of Naples, has died. He was well known for his studies of deranged metabolism, notably diabetes, and most recently for the method of treating cholera by means of rectal injections of tannic acid and subcutaneous injections of a saline solution.

New York Post-Graduate Medical School.—At a meeting of the Board of Directors held May 17, 1893, A. Palmer Dudley, M.D., was elected Professor of Diseases of Women; George M. Edebohls, M.D., Professor of the Diseases of Women; and George T. Elliot, M.D., Professor of Diseases of the Skin. J. West Roosevelt, M.D., has resigned his position as Professor of Clinical Medicine.

BOOKS AND PAMPHLETS RECEIVED.

Sixty-third Annual Report of the Inspectors of the State Penitentiary for the Eastern District of Pennsylvania, for the Year 1892. Philadelphia: Allen, Lane & Scott, 1893.

Irrigation of the Urethra and Bladder by Posture and the Continuous Current. By B. H. Daggett, M.D. Reprinted from the Buffalo Medical and Surgical Journal, 1893.

Three Cases of a Hitherto Unclassified Affection Resembling in its Grosser Aspects Obesity, but Associated with Special Nervous Symptoms—Adiposis Dolorosa. By F. X. Dercum, M.D. Reprinted from The American Journal of the Medical Sciences, 1892.

Cerebellar Titubation; Sunstroke Sequelæ; Syringomyelia; Traumatic Hysteria. By F. X. Dercum, M.D. Reprinted from International Clinics, vol. ii, 2d series.

Two Cases of Akromegaly, with Remarks on the Pathology of the Affection. By F. X. Dercum, M.D. Reprinted from The American Journal of the Medical Sciences, 1893.

Bloodless Amputation at the Hip-joint by a New Method. By Nicholas Senn, M.D., Ph.D. Reprinted from the Chicago Clinical Review, 1893.

A Memorial to Congress on the Subject of a Road Department at Washington, D. C., and a Comprehensive Exhibit of Roads, their Construction and Maintenance, at the World's Columbian Exposition. Boston: Albert A. Pope, 1893.

Trional and Tetronal. By William Mabon, M.D. Reprinted from the American Journal of Insanity, 1893.

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SOME REMARKS ON ARSENICAL POISONING, WITH SPECIAL REFERENCE TO ITS DOMESTIC SOURCES.[1]

BY FREDERICK C. SHATTUCK, M.D.,

JACKSON PROFESSOR OF CLINICAL MEDICINE IN HARVARD UNIVERSITY; VISITING PHYSICIAN TO THE MASSACHUSETTS GENERAL HOSPITAL.

ARSENICAL poisoning may be either acute or chronic. Speaking broadly, the manifestations of the acute form vary according to the mode in which the poison influences or enters the system; whether its action is mainly local on the skin or exposed mucous membranes; whether it is taken into the stomach, or reaches in a gaseous form the blood and tissues by inhalation through the lungs. We thus have inflammation of the skin or superficial mucous membranes, intense gastro-intestinal irritation, or symptoms of a very grave but more general character. There is less close relation between the manner of exposure and the character of the leading symptoms in the chronic forms, which include most cases of so-called domestic poisoning; but in these, as we shall see later, all avenues of entrance into the system may be open at once. It is interesting to note that patients who survive the early stages of acute poisoning may later, through absorption into the blood and deposition in the tissues, present symptoms identical with those which may also follow the slow and more or less continuous absorption of far smaller, perhaps of very small doses. For instance, in a husband and wife who nearly died from arsenic administered once or at most twice in their food by a daughter, who hoped thus to secure an inheritance and render herself more acceptable to a lagging lover, I have seen the development of extreme general neuritis and of pigmentation of the skin resembling, except in its universality, that of Addison's disease. In the husband ninety-three days elapsed before Prof. E. S. Wood failed to detect arsenic in the urine.[2] Such cases form part of the evidence that the metal is stored up in the system and forms albuminoid compounds, from which it is only gradually set free, and they also illustrate the double toxic action of arsenic, its local irritant and its general systemic effects. It may be mentioned that arsenic seems to be stored up in the brain and spinal cord more largely even than in the liver.[3]

The leading statements which follow admit, I suppose, of no dispute.

[1] The Semi-annual Address before the Philadelphia Pathological Society, April 27, 1893.

[2] The husband is still, after a year's interval, a paralytic and in the poor-house, I am told.

[3] Poncy and Livon: Journal de Pharmacologie et Chemie, October, 1879, p. 344. Scolosoboff: Bulletin de la Société de Chemie de Paris, xxiv, No. 3. Gautier: Annales d'Hygiène, January, 1876, p. 136.

A. 1. The continued administration of arsenic by the stomach is liable to lead to symptoms of poisoning. These symptoms may be direct—gastro-intestinal irritation; or indirect—anemia and debility, dermatitis of different forms, skin-pigmentation, redness of the conjunctiva, puffiness under the eyes, headache, irritation of the upper air-passages, irritation of the kidneys as shown by small traces of albumin, casts, and blood in the urine, and peripheral neuritis. This list could be made longer, but comprises the more frequent manifestations. In some respects the neuritis is one of the most interesting of these. With regard to it I recall reading, but cannot now remember where, the statement of Seguin, that in his very large experience he has never seen neuritis follow the medicinal use of arsenic. In my more limited experience I have seen at least two such cases. One was that of a young woman successfully treated for chorea with large doses of Fowler's solution, which were well borne as far as the digestive organs were concerned, but she developed a marked and widespread paralysis of both motion and sensation from which recovery was slow. The other was also in a young woman, treated by me last autumn for leukemia with Fowler's solution, gradually increased to fourteen drops thrice daily, and maintained for some weeks at that level. She developed a mild but unquestionable neuritis, and also the characteristic brown discoloration of the skin. One post-choreic case of arsenical neuritis has been observed at the Boston Children's Hospital.

2. Medical literature contains reports of a fair number of cases of poisoning by arseniuretted hydrogen, although Professor Chandler[1] says: "I never knew a case except those mentioned in the books many years ago—Galen, for instance, who put his nose to it and is said to have been killed by it—and I have never heard of one." These cases are chiefly acute and mostly rapidly fatal. The possibility that chronic non-fatal cases of poisoning originating in this way may be pretty common will be touched upon later.

3. Arsenical stockings, veils, and other articles which are liable to be closely applied to the human skin, have often been held responsible for toxic symptoms—general from absorption of the drug, as well as local from its irritant effect. A well-known Boston physician had two attacks of sore fingers. He consulted Dr. J. C. White, who asked him whether he had anything to do with arsenic. He could think of nothing except some playing cards which he had used. These were found to be loaded with arsenic, were discarded, and he has not had any similar trouble since. Reports of general poisoning from the use of arsenical pastes, lotions, and ointments are also to be found. Dr. Stillé cites a number in his work on *Therapeutics and Materia Medica*.

B. The great difference between different persons in

[1] Appendix to No. 417, House of Representatives, Massachusetts, 1886.

susceptibility to arsenical poisoning must be admitted; but the influence of idiosyncrasy does not seem to be greater here than in the case of lead, alcohol, tobacco, and many other toxic agents. It is highly probable that habituation also plays a part. Here we naturally think of the Styrian peasants so often brought up in this connection. It seems to be a fact that some of them gradually acquire the power of taking, without obvious inconvenience, doses which would prove fatal to virgin soil—six grains, for instance, it is said. But no modern physician, so far as I know, has in very recent times carefully investigated this peasantry to ascertain how many try to become arsenic-eaters and fail in their attempt; how many develop neuritis or other indisputable toxic symptoms. I cannot regard the statement of Marik[1] as conclusive. He bases his opinion that arsenical paralysis is rare in Styria upon conversations with physicians practising in that province, and on a paper of B. Knapp,[2] written in 1885, when we knew much less about neuritis, especially in its milder forms, than we do now. A degree of neuritis might well pass unnoticed in a peasant, which an artisan, for instance, would find forced upon his attention.

We have all seen patients, to whom we wished to give arsenic for anemia, chorea, or other cause, show intolerance even of the smallest doses given with every precaution. I remember a leukemic boy in my hospital ward, who bled at the gums and grew worse in every way whenever an arsenical course was instituted, even though only one drop of Fowler's solution thrice daily was given.

C. Arsenic is widespread in civilized countries. It enters as component or impurity into many articles of domestic use. I will not weary you with an attempt to form a complete list; but among these articles may be mentioned wall-papers; cretonnes and other prints; red-striped bed-ticking; Turkey-red cotton; child's paints; the "plated" or "glazed" papers used for kindergartens, for covering paper boxes or wrapping confectionery; some woollen dress goods, hangings, and curtains; black and other stockings; some distemper paints—indeed, anything in which an arsenical anilin pigment is used as a dye. These dyes may contain from 2 per cent. to 3 per cent. of arsenic by weight. Formerly arsenic acid was largely used as an oxidizing agent in the manufacture of fuchsin or magenta, but chromic acid answers equally well. Sodium arsenite is also used as a mordant to fix colors which may be non-arsenical. Silks are rarely arsenical.

D. From these articles or from some other sources in our surroundings, arsenic is absorbed into the system of many persons, as is shown by its detection in the urine of at least 30 per cent. of persons taken at random by J. J. Putnam.[3]

We now come to the question as to whether arsenical poisoning arises from the afore-named domestic sources, or, rather, whether it so arises frequently enough to demand the serious consideration of physicians, the guardians of the health of the public, as well as that of their individual patients. The burden of proof certainly rests on those who maintain the affirmative. Let us, therefore, examine the evidence for and against, beginning, as is I think usual in judicial inquiries, with the case for the plaintiff.

Readily-accessible medical literature contains the reports of a large number of cases, many of which came under the observation of highly-trained physicians presumably alive to the dangers of incomplete observation and hasty deduction, and these cases presented symptoms of varying intensity and detail, persisting in spite of what seemed judicious treatment. These symptoms were mainly subjective in some, but usually objective as well, ranging all the way from anemia and debility to extensive peripheral neuritis. For the symptoms, no obvious cause could be discovered in the patients' manner of life, habits, or surroundings. In not a few cases a marked improvement took place on change in locality, perhaps trifling in character, while the symptoms speedily returned on resumption of home-life, without clearer assignable cause than at their first appearance. It was then found that the wall-paper of a room in which the patient slept or passed much time, the Turkey-red lining of a bed-quilt under which he slept, the red-striped bed-ticking covering his pillows or mattress, the chintz coverings of a sofa or of chairs, contained considerable quantities of arsenic. Then arsenic was also found in the urine of the patient, although it had not been given him as a drug or entered his system in Vichy or other arsenical mineral water. The kidneys were in an irritated condition. The arsenically-contaminated material was then removed and replaced by one free from the metal. This was followed by the more or less prompt abatement and disappearance of all symptoms and by restoration to health. In comparatively few of these cases is the history completed by finding the urine non-arsenical after the lapse of some months. If the patient is well, he often passes out of the observation of the physician, who may not care to subject the patient or himself to the expense of an examination which, from the point of view of the layman, seems unnecessary.

All of the reported cases are not so complete as those just sketched. In many the evidence consists in a certain grouping of symptoms for which it is difficult to account, arsenical surroundings and urine, removal of arsenic from the surroundings, and recovery. I speak of a certain grouping of symptoms. There is no one symptom which is invariably present in cases of supposed arsenical poisoning. We cannot look for a pathognomonic sign here more than elsewhere; but anemia, debility, loss of appetite, frontal headache, perhaps nausea and vomiting, redness of the eyelids, and catarrh of the air-passages or of the intestinal tract, may be so combined as to be highly suggestive that arsenic will be found in the surroundings and also in the system.

If cases like these were isolated, occurred only in one locality, or only in the practice of one physician, one would not attach the same importance to them which one is led to attach when they are seen to occur in Great Britain and the Continental countries, in Maine and Michigan and other States as well as in Massachusetts. In reasoning from cause to effect or from effect to cause, we must often ask ourselves whether the association of result with supposed cause is merely coincidental

[1] "Ueber Arsenlähmungen," Wien. klin. Wochenschr., 1891, Nos. 31–40.

[2] Erg. Hefte zum Centralblatt. f. allg. Gesundheitspflege, 1885.

[3] Boston Med. and Surg. Journ., 1890, cxxii, p. 421.

or otherwise. I think I am alive to the ease with which, especially when public agitation is going on, members of our profession, as well as the laity, may jump at conclusions and connect things which do not belong together. The removal of a supposed injurious influence may well act as a species of mind-cure, and the reference of more or less vague symptoms of ill-health to a definite and removable cause may satisfy the patient and the physician alike. Some of the reported cases of domestic arsenical poisoning are certainly inconclusive, and I have no doubt that many persons in Boston and vicinity, particularly, have erroneously believed themselves or have been believed to be victims of this kind of poisoning. Some of the cases which have been reported and observed suggest that arsenic may be but one of two or more causes tending to produce ill-health, and that a person already debilitated from some other cause or causes may then be more susceptible to the supposed injurious influence of this poison. Prof. E. S. Wood[1] refers to the case of a young athlete whose convalescence from influenza seemed to his physician, a thoroughly competent man, unreasonably delayed. Arsenic was found in his urine, although the papers, carpets, etc., were free. Eighteen stuffed birds were finally removed from his room and recovery was then rapid.

Allowing full weight to inconclusive cases, and also to all other possible sources of error, it seems to me that there remains enough to make us hesitate, to say the least, before we attribute the whole thing to mere coincidence. The temptation is great to cite cases, but I shall confine myself to a series reported by C. P. Putnam,[2] and a few of my own which have not been published. When Dr. Putnam went on duty at the Massachusetts Infant Asylum in the spring of 1890, he found the babies looking very pale, without any apparent reason. He then noticed suppurations on the fingers and a slight discharge from the ears. Occasionally a nurse had sores on the fingers. One had an aural discharge, and other skin-eruptions were noticed. Arsenical poisoning was thought of as possible, but there was no wall-paper, no carpets, or other suspicious articles. The health of the inmates of the asylum grew worse. Bronchitis appeared, and two children died from inflammation and ulceration of the air-passages, involving the pleura.[3] Some blue dresses recently furnished by the asylum to all the nurses fell under suspicion and were found to contain much arsenic. They were discarded and the health of the institution was reëstablished. Much of the arsenic was found to be loose in the cloth. The dresses were therefore thoroughly washed in the winter of 1891 and resumed by the nurses. Very soon afterward both nurses and babies began to have sores on their fingers and other signs similar to those which had appeared before. The dresses were again discarded. The symptoms again disappeared and have not recurred in the past two years. The evidence in my own cases is not as striking, but they serve as fair illustrations of many cases seen by many physicians.

1. W., a clerk in a large dry-goods house, entered my service in the Massachusetts Hospital in the fall of 1891, with poor general health and marked neuritis in all the extremities. It was with much difficulty that he could pick a pin up from the table. Neither alcohol, rheumatism, lead, nor gout could be considered as causative of the neuritis. The physician under whose care he had been, a gentleman well known to me, had given him no arsenic. The bedroom wall-paper, which had been applied for eight years, was highly arsenical, and arsenic was found in his urine. He soon began to improve, was discharged from the hospital, and after a time resumed his work, discarding the arsenical wall-paper. I saw him very recently again, and found his general condition still below par, with some neuritis still present, though not enough to seriously interfere with his work. An electric examination, which Dr. J. J. Putnam was kind enough to make, confirmed the diagnosis of neuritis. The urine still contains a considerable amount of arsenic, the source of which I have not as yet been able to trace.

2. G., a laster, entered my service January 30, 1893. Investigation showed that no arsenic had been given him before this. Besides pallor and loss of flesh, he had ataxic paralysis of all the extremities, which proved, after thorough study, to be due to peripheral neuritis, and for which the usual causes, as laid down in the books, could not be considered as responsible. I then had the urine examined by Prof. Wood for lead and arsenic. The former was absent, the latter present in large amount. I then secured some of the paper from the bedroom which the man had occupied for two years, and also samples of the leathers on which he worked. The paper was highly arsenical, as was also one of the samples of leather. After entrance to the hospital he grew steadily worse for some weeks, a continuance of the downward tendency present when he first came under observation, and was confined to bed; but he is now greatly improved and steadily gaining in all respects.[1]

3. Two vigorous boys, brothers, had been confined to the house in town by colds and chicken-pox shortly after their return from the seashore. From these diseases they had just recovered when they, and also another brother who had been previously well, began to have recurrent attacks of nausea and vomiting. I presently suspected that some kind of poison from without was at work, and had the plumbing, cooking utensils, refrigerators, etc., examined, without finding here any cause for the illness. The symptoms grew worse. The youngest boy became extremely weak. I then had the wall-paper examined for arsenic, which was found in large quantity in that of the hall, entries, and stairway on every story, and also in that of five chambers. The papers had been on for a number of years. There was *no* arsenic in the paper on the walls of the rooms occupied by the sick

[1] Hearing before Committee of Massachusetts Legislature, 1891, p. 83.

[2] Ibid., p. 66.

[3] This statement does not quite correspond with that printed in the report, but is in accordance with information given me recently by Dr. Putnam. In default of a bacteriologic examination of the lungs in the two fatal cases, it must remain an open question as to the part, if any, played by arsenic in the production of the fatal lung-disorder. The other symptoms, however, seem less open to doubtful interpretation.

[1] Repeated examinations of the urine have been made for arsenic by Wood. The amount diminished gradually, and April 24th the arsenic had practically disappeared, eighty-four days after removal from arsenical surroundings.

children; but I found that they always slept with their windows shut and the doors into the entry open. The boys were at once removed from the house, and the papers were replaced by some free from arsenic. The patients rapidly recovered, and during the three years which have since elapsed have never had any recurrence of such symptoms. The urine of one of the boys has been examined for me within a fortnight and found to be free from arsenic. My supposition is that as the entry papers became worn, the arsenic was gradually set free in larger quantities and contaminated the air of their bedrooms, which were constantly in free and uninterrupted communication with the entry.

In none of these cases can the arsenical origin of the symptoms be regarded as absolutely proved; but I should like to call attention to the parallelism between the symptoms and those which are described in the text-books as occurring from contact with or ingestion of the drug. A few such cases may be only suggestive; but when they are multiplied manifold, as can easily be done by anyone who cares to consult the literature, the evidence furnished by them seems to me to be such as is worthy of serious consideration.

It may be mentioned that a number of European governments recognize arsenic as a source of danger in articles of domestic use.

Let us now consider the objections which can be raised —the case for the defence. In so doing I shall say what I think can be said to meet those objections, just as I called attention to some weak points in the argument for the plaintiff.

First, there is the alleged immunity of workmen and others whose occupation brings them into close relation with arsenic. A number of wall-paper manufacturers and dealers testified before the Committee of the Massachusetts Legislature of 1891 that during the many years they had been in the business they had never known of any injurious influence being exerted on themselves or their employés from arsenic. A number of such cases are, however, reported. Draper[1] mentions several cases among those employed in wall-paper shops, while cases of poisoning from green tarletan, artificial flowers, and among taxidermists are by no means rare.[2] E. S. Wood tells me that several workmen have stated to him that they suffer every time they remove an arsenical paper from the walls of a room. It is quite conceivable that workmen should not care to mention their disabilities, if not too great, to their employers, for fear of losing their places. The symptoms in these cases are essentially the same as those often seen in the consumers of arsenical goods. Moreover, the conditions are somewhat different between prolonged nightly exposure to the air of a bedroom, for instance, covered with an arsenical wall-paper, and the exposure to which a clerk in a paper-shop is subjected. The papers are there tightly rolled and stored on shelves. But small portions of the rolls are displayed to customers, and only for a short time. The shop, moreover, must be dry, or the papers would mildew and become unsalable. Arsenical dust is, therefore, the only thing to be dreaded. As far as reports in medical literature go, there certainly seems to be a relative immunity among workmen. Whether this immunity is really as great as it seems is a question which appears to me worth further study. The observance of simple precautions can, undoubtedly, do much to lessen the danger.

Next, we have the fact that far larger quantities of arsenic in solution—*i. e.*, in a condition ready for immediate absorption—can be and constantly are given medicinally by the mouth with impunity or only transitory gastro-intestinal disturbance than it is conceivable should, save in very rare instances, enter the system from domestic sources. Chemists of considerable experience in the examination of urine for arsenic recognize this fact, and I have repeatedly known the report to be made that the amount was so large that it must, in part at least, have been taken somehow by the stomach. Elimination after ingestion is slow. In a patient of mine to whom twenty-seven drops of Fowler's solution were given during three days, arsenic was detected in the urine by Wood until the fifty-eighth day. In another, who received sixty-nine drops in seven days, eighty-two days were required for elimination. But the conditions of gastric administration and exposure to arsenical papers or goods are not identical. There are reasons for believing, as will appear more fully later, that some gaseous form of arsenical compound may be set free in consequence of the growth of certain moulds, and that in this form and inhaled the poison may be more active than when it enters the system exclusively through the stomach. But whether arsenic is given off as a dust or gas, the duration of the exposure is generally quite different; that is, it is likely to be far longer in the domestic cases. In either case habituation may, but does not necessarily, ensue.

This leads us to the next objection, that arsenic is found in the urine of many persons who are quite free from indications of subjective or objective disease. J. J. Putnam has conclusively shown that the same is true of another metal, lead, the toxic influence of which on some persons is admitted by all. If this objection is to have weight with one metal, it would seem to have equal weight with the other. Idiosyncrasy, which includes relative immunity and habituation, must relate to both or neither.

The objection that arsenical poisoning of domestic origin occurs only in Boston would be too trivial to notice here were it not that it has been seriously urged, though, it is true, mainly by interested parties. It so happens that the question has received more attention in Boston than perhaps elsewhere in the United States, but the statement that cases are not observed elsewhere argues simply the ignorance of the person making the statement. There are plenty of unrecognized relations between cause and effect, plenty of unclassified conditions which are constantly before our eyes if we could only see them. The general recognition of peripheral neuritis is a very recent matter.

[1] Third Report Massachusetts State Board of Health, 1872, p. 17.

[2] E. G. Cutler reports his investigation of a Lowell box-factory. Two cases of illness among the employés seem fairly attributable to the arsenical green and red papers used to cover the boxes. These contained about eight grains of arsenic to the square foot, but were heavily sized. The health of the girls in general was excellent. Much attention was given to the cleanliness and ventilation of the work-room, and other precautions were taken to prevent injury. Seventh Report, Massachusetts Board of Health, 1876, p. 546.

The risk is considered sufficiently great to warrant legislative interference in Sweden, Germany, Russia, Austria, and Denmark. In France no regulation exists, except with reference to articles of food and drink and children's toys, though the government has sent circulars to manufacturers warning them of the penalties to which they are liable if accidents result from the presence of poisonous substances in their goods. In England there is no law, but there has been considerable agitation on the subject, especially by the National Health Society and the London *Lancet*.[1] The very agitation has, however, been followed, as it is stated, by a marked diminution in the amount of arsenic contained in articles for domestic use. An abstract of the laws on this subject will be found in the report of the Massachusetts Board of Health for 1885, in an article from the pen of E. S. Wood, entitled "Arsenic as a Domestic Poison." This abstract is taken from the English National Health Society's report for 1883.

I have tried to ascertain what changes, if any, have been made in these laws since 1885, and am indebted to Vorban[2] for most of the statements here immediately following. The Swedish laws, the most stringent and precise, remain the same since 1883. The maximum amount of arsenic permissible in wall-papers, materials for artificial flowers, and some other articles, is about one-fourteenth of a grain to the square yard; in textile stuffs and yarns and other specified articles one-seventh of a grain to the square yard. The process to be used in the chemical determination is carefully defined. The German law of 1882 was found to be too stringent in that it absolutely prohibited arsenic in wall-papers and articles of apparel. The metal is so widespread and the means for its detection are so delicate that minute traces can be found, oftentimes in spite of the best faith and most painstaking care on the part of the manufacturer. The law of 1887, which went into effect May 1, 1888, allows a maximum of two and a half grains to the square yard, provided that the arsenic is in a form insoluble in water. An exception is also made in favor of colors which do not contain the arsenic as a constituent part, but simply as an impurity; and this at the most in a quantity unavoidable in the ordinary methods of manufacture. Obviously, then, exceptions might afford opportunities for dispute and a loophole for a dishonest manufacturer. The Chancellor of the Empire is authorized to issue directions as to the process to be used in the detection and estimation of the amount of the metal.

The Russian general law of 1876 seems to be still in force. It allows a maximum of from one-seventh to one-eighth of a grain of arsenic to the square yard in wall-papers. There are some local regulations, as in Riga and Dorpat. In the latter place the maximum is fixed at one-fifteenth of a grain per square yard in wall-paper and one-thirtieth of a grain in cloth.

In this country, Massachusetts takes the lead in the agitation on the subject. The ball was opened by Dr. Draper in 1872, and four unsuccessful attempts have been made to secure legislation. The act of 1891 prohibits arsenic in confectionery and children's toys, and authorizes the Board of Health to expend a sum not exceeding one thousand dollars on "such investigations and inquiries as they deem necessary as to the existence of arsenic in any paper, fabric, or other article offered for sale or exchange." The outcome of this is the report of Prof. W. B. Hills,[1] with regard to the conclusions of which I shall speak later.

Recognition of the danger which may exist of domestic arsenical poisoning is found in the reports of Boards of Health of Michigan for 1873, California for 1874, Rhode Island for 1878, Connecticut for 1879, Pennsylvania for 1887, New York for 1888, and Maine for 1889, as well as in those of Massachusetts for 1872, 1889, and 1892. In the year 1874 the Committee on Poisons of the Michigan State Board of Health prepared one hundred books of specimens of poisonous papers bought from first-class dealers in various cities, and placed these books in public libraries. The book was entitled *Shadows from the Walls of Death, or Arsenical Wall-papers.* This title was followed by a quotation from Leviticus, 14th chapter: "And behold, if the plague be in the walls of the house, with hollow strakes, greenish or reddish, . . . Then the priest shall go out of the house to the door of the house, and shut up the house seven days. . . . And he shall cause the house to be scraped within round about, and they shall pour out the dust that they scrape off without the city into an unclean place." I find the plague referred to is leprosy. One lady is said to have been poisoned by examining this book.

In the report of the State Board of Health for Pennsylvania for 1887, in the report of the Committee on Adulterations, Poisons, etc., it is stated that but little work has been done during the year for lack of funds and by reason of the expensiveness of chemical investigation, although "in the manufacture of certain foods employed in our households, wall-papers, textile fabrics, dye stuffs, etc., we shall find abundant scope for the operation of the Board's conserving energies." The only State besides Massachusetts in the laws of which wall-paper is mentioned in connection with poisonous pigments, as far as I can find, is New Hampshire, and here the matter is left in such a way that it can have no direct practical result.

We see, then, that the positive evidence is strong and comes from many sources. It seems to me far stronger than the negative evidence which I have tried to present fairly. It would certainly appear to be undesirable that the public should be exposed to an influence which there is so much reason to believe to be injurious, especially when such exposure is quite unnecessary. In proof that it is unnecessary I will call only three witnesses.

Prof. W. B. Hills reports in 1892 to the State Board of Health of Massachusetts, that in the last ten years decided improvement has taken place in the wall-papers sold in the State. About 3 per cent. of the papers manufactured to-day contain more than one-tenth of a grain of arsenic to the square yard, against, approximately, 30 per cent. ten years ago. Between 60 per cent. and 70 per cent. of the papers sold in the State are free from arsenic. About 90 per cent. contain less than from one-twentieth to one-tenth of a grain per square yard, an amount which can be harmful to probably very few people. Prof. Hill states that arsenic is not essential to

[1] 1892, ii, 43.

[2] Inaugural Dissertation, Dorpat, 1889.

[1] Report of Massachusetts State Board of Health for 1892.

the production of the colors, and that those which were formerly arsenical can now be made without that metal. An absolutely exact comparison between the examinations made from 1879 to 1881 and from 1889 to 1891 is impossible, for the reason that during the latter period the so-called Marsh-Berzelius test was used, while in the earlier period the original Marsh test was followed. The modified method is much more delicate than the Marsh test and detects quantities of arsenic which escape the latter. A still more striking improvement is shown in the "glazed" and "plated" papers used in kindergartens, book and pamphlet covers, to wrap lozenges, etc. The use of Paris green is much less common in tickets, show-cards, and the like than it was ten years ago.

Mr. Henry Saltonstall, the treasurer of the Pacific Mills, one of the largest cotton mills in the world, testified before the Legislative Committee of 1891,[1] with authority to speak for four of the six print works in Massachusetts, as follows: "I wish to say in behalf of them (the print works) that not only are we averse to a law restricting the use of arsenic, but we welcome such a law. . . . We would be glad to have a reasonable and fair law which should prohibit the use of arsenic by any mills inside the State or factories outside the State which have their goods for sale here. . . . I don't dare to say what would be the danger-limit, but I think if one-fiftieth of a grain of soluble arsenic were allowed per square yard we could come down to this limit in textile fabrics or furniture." The proposed law, which failed to pass, allowed one-twentieth of a grain per square yard, not distinguishing between the soluble and insoluble forms. This is strong testimony to show that there is no necessity for the use of dangerous quantities of arsenic, coming, as it does, from a most competent general chemist, and also from a very large manufacturer, who has presumably consulted with his own chemists before he committed himself.

Mr. Jones, student-assistant in the chemical laboratory of the Harvard Medical School, showed me an old sample of green tarlatan which contained one-half its weight of arsenic. He tells me he has bought samples recently and failed to find any arsenic in them. Until very lately many of the red-striped bed-tickings contained much arsenic, but they, too, show the effect of agitation on the subject. In connection with the preparation of this paper I meant to experiment on myself. Professor Wood kindly examined my urine and failed to find arsenic. I then tried to buy arsenical bed-ticking to cover my pillow, taking from Wood a sample which was largely impregnated. Both pieces which were bought for me proved to be non-arsenical, so I was unable to complete my experiment and find out whether my urine became arsenical after sleeping on this pillow-covering.

We are next led to the question as to what amount of arsenic is allowable, a question which nobody seems prepared to answer absolutely. It is, however, probable that an amount not exceeding, say, one-fifteenth of a grain to the square yard, irrespective of solubility and form, may be regarded as practically innocuous. In the German experience we find one explanation for the difficulty in framing a law which will work no injustice to manufacturers or harm to consumers. The best tests are so delicate, and the presence of minute traces of arsenic so general in one form or another that absolute prohibition is really impracticable. A satisfactory law must, like the Swedish, not only fix the maximum allowable amount, but must also prescribe the method of chemical analysis. It is probably not practicable to distinguish, legally, between soluble and insoluble arsenic.

Some manufacturers and dealers argue that the diminution in the amount of arsenic contained in papers and fabrics during recent years shows in itself that no law is necessary. But this diminution cannot be attributed to anything except the agitation of the subject, a continuance of which demands considerable public spirit on the part of the agitators, whose ranks are not generally largely recruited from among the moneyed class. It is, moreover, doubtful whether the benefits of the agitation in Massachusetts extend widely beyond the State. Arsenical goods are, in the main, unsalable there; but no questions are asked in most parts of the country. If purchasers ask no questions, even in Massachusetts, they are liable to receive dangerous goods.

The question is interesting and also important, as to the manner of introduction of arsenic into the system from domestic sources. When the arsenical material comes into close contact with the skin, whether broken or unbroken, as in stockings or in arsenical caustic paste, the avenue of entrance is plain. When absorption takes place from a distance, as in the case of wall-papers, the arsenic is set free either in the form of dust or in a gaseous state. In the former case it is swallowed and inhaled; in the latter, inhaled alone. There can be no question that arsenical dust is detached from papers, fabrics, water-colors, sometimes from curtains or carpets. The dust which has settled on ledges, etc., in rooms containing arsenical papers has been analyzed and found impregnated with the metal. The ease with which the poison is detached varies, of course, much with the character and surface of the paper and material. Some papers grow much more dangerous with age as they become worn; others are highly dangerous from the start. Covering an arsenical with a non-arsenical paper does not necessarily render the former innocuous. Varnishing an arsenical paper renders it safer, certainly for a time, but does not secure safety. Arsenic is sometimes used as a preservative for the paste which fastens the paper to the wall.

I think it was Fleck[1] who, about twenty years ago, first supported by scientific evidence the suggestion which had been previously made that a gaseous form of arsenic may, with the aid of moisture and in the presence of organic substances, be set free from arsenical pigments. Hamberg[2] detected the metal in the atmosphere of rooms with arsenical papers. The nature and manner of production of this gas has been studied by Husemann,[3] Selmi,[4] and very recently by Gosio.[5] The work of the latter is not very readily accessible, and I therefore venture to abstract a portion of his conclusions.

[1] Hearing before the Legislative Committee on Public Health, 1891, pp. 38 and 41.

[1] Zeitschrift f. Biologie, 1872, viii, 444; et seq.

[2] Schmidt's Jahrb., 1875, Bd. clxv, 240.

[3] Virchow-Hirsch's Jahresb., 1881, S. 413.

[4] Schmidt's Jahrb., 1875, Bd. clxviii, S. 60.

[5] Monograph, Ministry of the Interior, Scientific Laboratories of the Board of Health, Rome, 1892.

It is proved beyond question that arsenical gases can be developed by the growth of moulds in contact with arsenical chemical compounds. Only a few moulds possess this property. While many moulds can live and grow in the presence of arsenical compounds, only four have thus far been proved to possess the power of setting free arsenical gas: mucor mucedo, aspergillus glaucus, aspergillus virens, and penicillium brevicaule (the most important).

The conditions which favor the production of arsenical gas by these moulds are, first, those which favor in general the life of the fungus, abundance of oxygen, moisture, nutritious material, and suitable dosage of arsenic. Secondly, those which depend on the facility of the transformation of the arsenic. Thus arsenic acid, and the arseniates and arsenites of sodium and potassium are more easily transformed than the arsenite of copper. Third, the presence of carbohydrates (starch pastes). These moulds can, however, decompose arsenite of copper from papers even when they grow in the paste or glue fastening them to the wall. In the case of mucor mucedo, at least, the quantity of arseniuretted hydrogen evolved is small in comparison with another more important compound, probably the union of the metal with organic alcohol or aldehydic radicals.

These conclusions are the result of work up to May, 1892. Its further prosecution is promised. They are quite confirmatory of the English reports which suggest that arsenical wall-papers exert a more deleterious action during moist than during dry weather, and they throw important light on one method of domestic poisoning.

The main, if not the sole avenue of elimination of arsenic which has got into the circulation in one way or another is the kidneys. It is a practical point worthy of note that we do not as yet know any direct means to further the elimination. The treatment of chronic arsenical poisoning resolves itself into, first, stopping further absorption; second, general hygiene; and third, the treatment of such symptoms as may require it. Active catarrhal symptoms are likely to subside pretty quickly on the removal of the toxic agent. Neuritis is to be treated by massage and electricity, just as when due to other causes.

The prognosis is good, as regards both life and recovery. Fatal cases are rare, and recovery is relatively quick, unless neuritis is extensive or very advanced, or the arsenical poisoning is only one of a combination of causes producing ill health.

The method of detection used by all the gentlemen connected with the chemical department of the Harvard Medical School is the Marsh-Berzelius test, which is sufficiently delicate and easy of application. In determining the length of time necessary for the elimination of arsenic, Wood has used the method of Sänger.[1]

The conclusions I feel justified in drawing from the foregoing considerations, which I have endeavored to strip of unnecessary detail, are the following:

1. There is overwhelming evidence to show that many arsenical articles which enter into common domestic use are dangerous to health.

2. That while it is impracticable to demand absolute freedom from arsenic in these articles, the presence of injurious quantities of the metal is quite unnecessary.

3. That, therefore, carefully framed legislative restriction, if possible uniform throughout the States, is desirable.

4. That it is the duty of the medical profession everywhere to study the question, and to lend its powerful aid in forming public opinion and otherwise securing such legislation.

I wish to take this opportunity of expressing my indebtedness to Drs. E. S. Wood and J. J. Putnam and to Dr. J. L. Morse for indispensable assistance in searching the literature.

[1] Boston Medical and Surgical Journal, April 27, 1893.

ORIGINAL ARTICLE.

ANALYTIC NOTES ON SOME COMMERCIAL DISINFECTANTS.

BY HENRY LEFFMANN, M.D.,
OF PHILADELPHIA.

THE materials commonly known as Chlorinated Lime and Chlorinated Soda are among our most efficient disinfectants, being cheap, safe, and certainly germicidal. Their chemistry is somewhat obscure. They are usually regarded as hypochlorites, associated with chlorids, but this is at least doubtful as regards the calcium compound. However, there is no doubt that the main efficiency is due to some chlorin compound having practically the functions of a hypochlorite, and the tests for quality assume this to be the state of combination. The so-called chlorinated lime, or "bleach," finds enormous consumption in various industries, and as it is bought on assay certificates, its quality is as high as can be practicably produced. The cost of ocean transportation being the same for all grades, it is not likely that any very inferior grades will be found in the American market.

The chlorinated soda, or Labarraque's solution, is made from the calcium compound, and is, of course, influenced by the composition of the latter. It is worthy of note, that the disinfecting action of these bodies may be more thorough than is generally supposed, for the reason that they act powerfully on many ammonium derivatives, completely decomposing them, and liberating the nitrogen in the gaseous form. Now, the products of microbic action are in many cases ammonium derivatives, and these are not only often toxic, but they are capable of serving as food for other organisms. The destruction of these products, therefore, may contribute materially to the sterilization of the infected matter. The direct germicidal action, and also the chemical effects just mentioned, depend on the amount of chlorin held loosely (usually considered to be in the form of hypochlorites), that which exists as chlorid being useless. The former is generally designated as "available chlorin," and it seemed worth while to examine some of the brands in the market, as much use of these bodies may be made in the near future.

The method of assay, depending on the amount of arsenious acid oxidized by a given weight of the substance, need not be given in detail, as it is described in analytic manuals. In an article in the *Ephemeris*, for April, 1892, Dr. Squibb has given much interesting information as to the calcium and sodium hypochlorites, pointing out that the Pharmacopeia of 1880 changed the method of preparing chlorinated soda by reducing largely the amount of sodium carbonate, a change which he regards, and I think justly, as disadvantageous. He shows that the older solution, containing excess of sodium carbonate, has a more complete decomposing action on ammonium derivatives, and probably also deteriorates less rapidly. As a consequence of the change in formula, the solution of chlorinated soda furnished by many druggists contains a notable excess of calcium salts. The Pharmacopeia of 1880 also changed the names to chlorated lime and chlorated soda.

The samples herewith enumerated were obtained through retail druggists in the original packages, and in as fresh a condition as usually sold. In justice to the dealers, it should be mentioned that these preparations are subject to steady deterioration, not only through the influence of the moisture and carbon dioxid of the atmosphere, which form carbonates and liberate the hypochlorous acid, but a slow conversion into chlorate also occurs in a manner not yet thoroughly understood, and this change also reduces the available chlorin. In some of the brands, the results being low, two samples were tested.

SOLUTION OF CHLORATED SODA.

Brand.	Per cent. available Cl.	Calcium salts.
1. Bullock & Crenshaw	2.48	Present.
2. Smith, Kline & Co.	2.46	"
3. Powers & Weightman	1.31	None.
4. Rosengarten & Sons	1.24	"
5. Laboratory sample, U.S.P. 1870 (made by Squibb's formula).	1.8	"
6. Eau de Javelle (made in lab. by French formula).	1.06	"

CHLORATED LIME IN PACKAGES.

Brand.	Per cent. available Cl.
1. Bird Food Co.	29
2. Sailor	31
3. Crescent	22
4. "	20
5. Red Riding Hood	33
6. Brookman's	22
7. "	25
8. Golden Fleece (English)	30

The foregoing statements show that the commercial forms of chlorin disinfectants are mostly of good quality. The sodium preparation (Labarraque's solution), as prepared by the local druggists, presumably according to the latest edition of the Pharmacopeia, contains calcium, but may be easily freed from the latter, and improved by adding about an ounce of common washing-soda to one quart of the liquid, allowing the precipitate to settle, and decanting the clear liquid. In hospitals, and wherever there is intelligent aid available, it will be economical to prepare the sodium solution directly from the commercial chlorated lime of good quality, using the following formula, approximately that of the U. S. P. 1870:

Chlorated lime	1 pound.
Washing-soda	2 pounds.
Water	2 gallons.

In making solutions of chlorated lime, it is best to triturate the article with water to the consistence of thick cream, and then diffuse this mixture in the larger volume. If a mass of the material is simply shaken up with water, much will not dissolve. In this connection, it may be well to note that good chlorated lime is a nearly inodorous powder. If it is lumpy or pasty, or has a strong chlorin odor, it is somewhat decomposed. Solutions must not be heated. Some of these preparations retail at too high a price. Thus, sample No. 4 retails at 50 cents a bottle, of about 1¼ pints, while other samples, much richer in available chlorin, sell for 20 cents a quart. Good chlorated lime can be bought in small lots at less than 10 cents per pound, washing-soda at 5 cents per pound, which would make the cost of the Labarraque's solution such that it could be sold at 20 cents per quart, including bottling, with profit. Some years ago a well-known firm of manufacturing chemists had on the market a solution of sodium hypochlorite, containing, according to my own assay, about 5 per cent. of available chlorin, but this is not now obtainable. Such a solution would, doubtless, be of great value as a disinfectant.

CLINICAL MEMORANDA.

THERAPEUTIC NOTES.

BY SOLOMON SOLIS-COHEN, M.D.,
PROFESSOR OF CLINICAL MEDICINE AND APPLIED THERAPEUTICS IN THE PHILADELPHIA POLYCLINIC; ONE OF THE PHYSICIANS TO THE PHILADELPHIA HOSPITAL, ETC

II.

HYDROGEN DIOXID AND OZONIC ETHER.

THE use of aqueous and ethereal solutions of hydrogen dioxid was introduced into medical practice by B. W. Richardson in 1858. My own experience with these agents dates from 1882. During the last five years they have become generally known as to some limited portions of the great field of usefulness explored, surveyed, and delimited by Dr. Richardson, but many of their uses are as yet little availed of. It is of some of these little-known uses that this note will speak.

The general employment of solutions of hydrogen dioxid is almost exclusively as an external application to destroy pus and germs. It has a much wider range

of applicability as an internal remedy. Solutions containing the drug are best made with glycerin and should be given in water—about three ounces or half a tumblerful, with the dose.

In cases of *pulmonary tuberculosis*, the aqueous solution of hydrogen dioxid, ten-volume strength, may be given in doses of from one to four drams, three or four times a day, for the purpose of introducing oxygen into the blood. There is no doubt that oxygen is in this way absorbed from the stomach and combines with the hemoglobin of the red corpuscles as readily as if taken in by the lungs in ordinary respiration. The remedy is counter-indicated when there is persistent high fever, but not in cases of hectic fever, during the remission. Its greatest utility is in the early stages, when pulmonary infiltration can first be demonstrated, or in those cases in which physical signs are ill-defined, but the rational symptoms indicate what we call, for want of a better term, "incipient phthisis." When anemia is a feature of the case, hydrogen dioxid may be usefully combined with a ferruginous preparation, Richardson preferring the "syrup of the superphosphate of iron."

In some cases attended with constant irritative and unproductive cough, the ethereal solution called by Richardson "ozonic ether" (which contains thirty volumes of hydrogen dioxid) is exceedingly useful as an anodyne and antispasmodic. One-dram doses, in water, may be given; and sometimes it will be found advantageous to make a mixture of equal parts of Hoffman's anodyne and ozonic ether, giving it in doses of one or two drams. Such a prescription likewise assists the digestion and assimilation of fatty foods, especially of cod-liver oil.

Another useful expedient in cases of pulmonary tuberculosis in which it is considered advisable to give medicaments to check cough, is to dissolve the proper dose of codeine sulphate in a solution of hydrogen dioxid. The alkaloids readily dissolve in the aqueous solution and there is perfect compatibility. A little alcohol sometimes aids solution, and, as a rule, glycerin should be added to make the dose "smoother." It is best to make mixtures containing not more than twelve doses, to avoid the change that might occur in some instances from long standing. In a three-ounce mixture, of which the dose is two drams, about six drams of glycerin is a good proportion.

In whooping cough, hydrogen dioxid invariably shortens the course of the disease and modifies the symptoms favorably; in some instances almost marvellously. The dose for a child of three years is from half a dram to two drams of the ten-volume solution, every two hours. In severe cases, ozonic ether may be added or substituted, in such doses as the ether permits, for hydrogen dioxid is not likely to do harm in any dose. I have usually given fifteen minims of the ethereal in one dram of the aqueous solution. Sometimes a minute dose of codeine may be advantageously added; often a drop or two of eucalyptol will be useful when there is concomitant bronchitis. Latterly, I have in some cases alternated ozonic ether with bromoform.

Inhalations of "ethereal oxygen," which are useful not only in pertussis, but also in many other conditions, may be given by placing in a Wolff bottle, an ounce or two of the aqueous solution of hydrogen dioxid with half an ounce or less of ozonic ether, and allowing a solution of potassium permanganate in water (eight grains to the ounce) to drip in from a stoppered funnel placed in the stopper of one neck of the bottle, while the gas evolved is inhaled from a tube passing through the stopper in the other neck. A wide-mouthed bottle, with two tubes passing through the cork or rubber stopper, will likewise answer. When a stoppered funnel cannot be obtained, the solution of potassium permanganate is added to the solution of hydrogen dioxid in the bottle, and one of the necks or tubes being immediately stoppered, the gas can be inhaled from the other. This requires a bottle large enough to contain the greater volume of oxygen evolved at once. Eucalyptol, terebene, menthol, and other terebinthinate, aromatic, or balsamic agent may be added, and will pleasantly flavor the vapor, as well as add in some cases to its therapeutic efficacy. The ozonic ether may be omitted when the vapor of ether is not desired, as it is not essential to the production of oxygen in this way.

In anemia and chlorosis, I know of nothing that will so soon restore the corpuscles and coloring matter of the blood to a normal standard as the combination of hydrogen dioxid with iron. Richardson, as already stated, uses a mixture of solution of hydrogen dioxid, glycerin, and syrup of the superphosphate of iron. I have used this, and also a mixture of tincture of ferric chlorid (f℥iij), dilute phosphoric acid (f℥v), glycerin (f℥ij), and solution of hydrogen dioxid, ten-volume (q. s. ad f℥iv), of which the dose is from one to four drams (usually two drams), in water, three or four times a day. The use of hydrogen dioxid, in conjunction with arsenic, is now being tested in a case of pernicious anemia, but it is too early to speak of results. I would strongly urge the practice on those who have the opportunity to carry it out. The doses should be large—as much as a tablespoonful of the ten-volume solution.

In the debility following influenza, of which some extreme cases have come under observation, I have found the following combination of great use.

℞.—Strychnine sulphate . . .	½ grain.
Diluted phosphoric acid . .	4 fl. dr.
Glycerin	6 fl. dr.
Solution hydrogen dioxid (ten volume) to make 3 fl. oz.—Mix.	

Dose: Dessertspoonful in one-half tumblerful of water, three times a day, before meals.

The same or a similar mixture has been beneficial in neurasthenia and other chronic conditions of depression or exhaustion, and after recovery from debilitating diseases, to promote convalescence. It may also be used with advantage in pneumonia and other fevers when a cardiac tonic is indicated.

I have elsewhere called attention to the occasional effect of large doses of hydrogen dioxid in slowing and strengthening the pulse, similarly to digitalis; and this action is of advantage in pneumonia, as is likewise the introduction of oxygen into the blood by way of the alimentary canal, so that the combination of hydrogen dioxid with strychnine is especially applicable in that affection.

In gastro-intestinal affections, attended with flatulence

and eructation, I have often found hydrogen dioxid useful as an antiseptic, and also as a stimulant to the regeneration of a healthier epithelium—that is, if we may judge of histologic processes by clinical results. It is best given about five minutes before meal-times, and should be conjoined with lavage, or with the drinking of hot water from half an hour to an hour before meals.

In diabetes, hydrogen dioxid is useful, and one of the best methods of giving codeine in that affection is according to the method of Richardson, in which each dose consists of one-sixth of a grain (or more) of codeine sulphate, about twenty minims each of alcohol and glycerin, and enough hydrogen dioxid solution to make two fluidrams.

In conditions of *collapse* and *narcosis* hypodermatic injections of ozonic ether often serve a useful purpose in averting temporary dangers, in prolonging life, and in promoting recovery.

In *phosphorus-poisoning*, hydrogen dioxid should be useful as an oxidizing agent. Its administration could be followed by that of some organic salt of sodium or other alkali.

TWO OBSTETRIC CASES IN WHICH CHLOROFORM HAD NO EFFECT.

BY GEORGE EDGAR THOMPSON, M.D.,
OF NEW ALBIN, IOWA.

CASE I.—I was called to see Mrs. R. at 5 A. M. The woman was up and around the room, suffering with weak and irregular pains. On examination I found the os dilated sufficiently to admit the tip of my index finger. I at once ordered quinine sulphate, gr. xv, with a view of increasing the pains, but the condition remained unchanged until 10 o'clock, when the pains became more regular and more severe. The woman was very nervous, and at 10.15 had an hysterical convulsion. Ordinarily I can control the spasms of labor with chloroform, and I instituted the inhalation at once, but without the least effect. I then gave morphine sulphate, gr. $\frac{1}{4}$, atropine, gr. $\frac{1}{150}$, and repeated these in thirty minutes. At 12.15 o'clock the woman was delivered of a healthy child, weighing nine pounds. Immediately the convulsions ceased, and recovery was thereafter rapid.

CASE II.—Mrs. M., twenty-three years, a deutipara, was delivered of a large child, the labor being difficult. To relieve the intensity of the pain I instituted the inhalation of chloroform, but, although I gave it as fast as possible and as much as could be borne, it did not have the least effect.

The chloroform used was the best. As to the cause of its failure to act I am at a loss for an explanation.

A TEMPORARY CHANGE IN THE AXIS OF ASTIGMATISM.

BY GEORGE M. GOULD, M.D.,
OF PHILADELPHIA.

AN unusual and peculiar cause of a change in the astigmatic axis of a single eye lately occurred in my practice. The patient was a man, forty-two years of age, whom I had twice refracted during the past five years, finding each time the symmetrical axes of a moderate degree of compound hypermetropic astigmatism to be, O. D., 70°, O. S., 110°. Latterly, symptoms of eye-strain had appeared, and upon testing the refraction of the right eye I found that the axis had changed to about 110°, that of the left remaining as before. As this would break the law of symmetry, and, as moreover, the man's age and refraction-history made such a switching of the axis quite strange, I was puzzled to account for the phenomenon. The explanation was found to consist in the existence of a large Meibomian cyst in the upper lid of the eye in question, that had escaped my notice until I examined the eye more carefully. I opened the cyst and cleaned out its gelatinous and cheesy contents. In a few days I re-tested the refraction and found the old symmetrical axis reinstated. The pressure of the nodule had evidently temporarily changed the normal corneal symmetry.

A CASE OF TRANSPOSITION OF VISCERA.

BY GEORGE WOODWARD, M.D.,
OF NEW HAVEN, CONN.

ANNIE F., a German, aged sixteen years, suffering from intermittent malarial fever, came under my observation at the New Haven Dispensary, April 17, 1893.

Physical examination revealed a complete transposition of heart, liver, stomach, and spleen. The relative positions of these organs are normal, with the exception of the spleen, which is considerably enlarged, a result, presumably, of repeated malarial attacks.

The girl has enjoyed comparatively good health all her life and is quite unconscious of her disarranged internal economy, and promises to hold the interesting "post" a long while in abeyance.

Dr. L. S. De Forest, chief of the medical clinic, has confirmed the results of my physical examination, and it is by his courtesy that I am able to report the case.

COLLEGE AND CROWN STS.,
NEW HAVEN, CONN.

MEDICAL PROGRESS.

Oophorectomy for the Relief of Osteomalacia during Pregnancy.—RASCH (*Zeitschr. f. Geburtshülfe u. Gynäkol.*, xxv, 2, p. 271) has reported the case of a woman, forty-one years old, who had borne three children and was pregnant for the fourth time. The first child was living and well; the second was rhachitic and died of asthma before reaching its fifth year; the third died of convulsions when it was eight months old. The pregnancy had advanced to the fourth month. Symptoms of osteomalacia were marked; of these, the most conspicuous were pain and skeletal deformity. On account of the urgency of the symptoms it was decided to induce labor and subsequently remove the ovaries. These procedures were accordingly carried out, and the woman soon progressed to satisfactory recovery.

Periodic Epileptic Sleep-seizures.—JACOBY (*New York Medical Journal*, May 20, 1893, p. 541) has arrived at the conclusion that sleeping-attacks occurring alone or in combination with other symptoms, if of brief duration and followed by amnesia, are probably of epileptic character. If somnambulism, particularly of a noisy kind, is present, probability becomes certainty.

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SATURDAY, JUNE 3, 1893.

THE MAKING OF MEDICAL BOOKS.

WHEN the wise man of old gave utterance to the oft-quoted remark, "Of making many books there is no end," he would seem to have been speaking for all time, gazing with prophetic eye into the future. For in his day there were few readers, fewer writers, probably still fewer thinkers, and, of course, no printing-presses. It may be, indeed, that we under-estimate the cultivation of that age. Possibly there was a larger class of educated men, with a wider range both of theoretic and of practical knowledge, than would appear from the scanty records that have come down to us. Yet no one thing in the history of the world more strikingly illustrates its growth and progress than the vast additions to literature that have been made even within the memory of persons now living.

Had KING SOLOMON been a man of our own day, and had he referred to medical works only, he would hardly have qualified his statement of the case. Cyclopedias and systems, text-books, handbooks and compends, some embracing a wide range of subjects, others limited to special departments, succeed one another with bewildering rapidity. Some are diffuse, and some are terse. Many writers—why, we need not now surmise—quote the opinions of HIPPOCRATES, CELSUS, and all of the other ancient worthies, reminding one of that charming bit of satire, *Knickerbocker's History of New York, from the Creation of the World to the Present Time.*

Books have always had a fascination for us. We have in the course of years gathered a not inconsiderable number upon our own shelves, and have had access to some of the great public libraries. We have watched with interest the constant additions to the long catalogue of works intended by their authors to take a permanent place in medical literature. But, after all, we are forced to the opinion that in this great mass of printed matter there is very little indeed that is really new or valuable. Eliminate all the repetitions of things already known, all the non-essential padding, and the residue would be of small bulk.

Why, then, does this enormous reproduction of old material go on? There must be a demand for it; it must benefit somebody. For a book to exist, there must be an author or compiler, and a publisher; for it to succeed there must be a third party—a public that will buy it. Of the three, it is the general belief that, as a rule, the publisher derives the largest and the surest returns. The author may obtain reputation, practice, and, perhaps, pecuniary profit. What the readers shall gain depends partly upon the value of the author's work, partly upon the care and intelligence with which it may be studied.

Some books win success by their intrinsic merit; their authors have written from experience and profound study, and know how to put their views in an impressive and instructive form. Occasionally a writer with a striking and brilliant style makes a hit, even if there is doubt as to the safety of his guidance. And from time to time subjects come up and engage attention, so that everything written upon them will be read. But, perhaps, the greatest popularity is achieved by convenient compilations.

No one book holds its own permanently. There are sure to be changes of opinion, changes of practice, and even mere caprices of fashion, as much as in matters of dress. We well remember many years ago saying to a sagacious and far-seeing publisher that the time would come when there would no longer be any demand for a most valuable, learned, and popular treatise, which in his hands had already gone through many editions. He received the suggestion with utter contempt and incredulity. He and the author of the book are long dead, but *the book died before either of them.*

Letter-writing is one of the lost arts. With the advent of the telegraph people learned to condense what they had to say into the briefest compass. May it not be that something analogous will happen to book-making, so that authors will take for granted what is already established, and simply issue bulletins containing the essence of what they have to lay before the profession?

EDITORIAL COMMENTS.

The Business Aspect of the Practice of Medicine.—The Detroit Medical and Library Association has adopted what is described as a fee-bill. This is a scale of charges that is "intended to guide rather than govern members. The maximum and minimum figures have reference to the degree of responsibility and time consumed in a given case, rather than to the circumstances of the patient, which may justify a lower or a higher charge. All bills should be considered due when services are rendered. Statements should be rendered monthly." For an ordinary office prescription the fee is fixed at from $1 to $5. Other fees range from $2 to $5000. The last is the maximum for an operation for the removal of stone from the bladder. Three thousand dollars is the maximum fee for Cesarean section, ovariotomy, celiotomy, hysterectomy, abdominal and vaginal hysterorrhaphy, and amputation of the hip-joint. We fail to find any reference to discounts, allowances, or rebates of any kind, and to the consideration of cases that should receive gratuitous treatment. The abuse of the privileges extended by hospitals and dispensaries should also have deserved attention. We fear that there are inherent difficulties in the adoption of a fixed schedule of charges by physicians for professional services. We must look to the schools to send out only good men.

Medical Legislation in Georgia.—Georgia is one of the progressively diminishing number of States in which practically no restrictions are placed upon the practice of medicine, *i. e.*, the possession of a diploma carries with it the privilege to practise. The same struggle that has been witnessed elsewhere is now taking place in Georgia, except that the pernicious influences that are opposed to measures intended for the protection of the public and the elevation of the standard of medical education have, by their exclusion from neighboring States, here concentrated themselves. A bill has been passed by the Georgia Senate for the establishment of a "mixed" board of medical examiners, but by the united efforts of homeopaths, eclectics, and renegade physicians action by the House has been postponed until autumn. The struggle may be a long and wearying one, but there can be but one outcome. We desire to extend the heartiest encouragement to the earnest workers in a worthy cause.

Sanitation in Roumania.—A system of sanitation has been submitted to the Roumanian Senate, according to which notification, disinfection, and isolation are made compulsory in the case of cholera, variola, diphtheria, croup, typhus fever, enteric fever, scarlatina, morbilli, pertussis, puerperal fever, and granular conjunctivitis, as well as the following diseases transmissible from animals to man: glanders, anthrax, and rabies. Revaccination is made compulsory, and vaccination and revaccination must be practised with animal lymph. Special provision is made for the repression of pellagra, malaria, and syphilis—diseases that are extremely common in Roumania. In the case of unhealthy houses power is given to prefects and mayors to construct latrines and drains at the expense of the owners, or if the defects are irremediable, to close these houses. Mayors are made responsible for the purity of the water-supply in their respective communes.

An Anglo-American Hospital at Rio Janeiro has recently been opened, which, when all of the arrangements are complete, will contain thirty-five beds. The enterprise has been furthered by the resident English and Americans, at a cost of $210,000. Special attention has been paid to the sanitary arrangements. The water-closets are all outside of the building proper; and the drainage has been relaid. A steam disinfector and laundry are contained in a detached building, and an English matron and two nurses were ready to go on duty as soon as the hospital was opened.

Ophthalmia Among Hop pickers.—A special form of ophthalmia of acute character has been observed in England among hop-pickers. Women and children appear to be especially susceptible; men enjoy apparent immunity. The former are the more intimately engaged in the actual handling of the hop-cones. Hypopyon and keratitis may occur as complications, and vision may be greatly interfered with as a result of changes in the cornea.

SELECTIONS.

ONE KIND OF HOMEOPATHY.

A large gathering of people of the higher classes of St. Petersburg, on April 5th, assembled to hear a public debate between champions of homeopathy and of orthodox medicine. In the Russian capital, as elsewhere, the upper classes have a natural leaning toward heresy in medicine, and at the commencement of the discussion their sympathies were almost entirely with the disciples of Hahnemann. The "allopathic" side of the question was upheld, not by a medical man, but by Professor Goldstein, a pharmacist, against whom, therefore, no allegations of professional jealousy could be made. Homeopathy was defended by Dr. Brasal, the leader of the sect in St. Petersburg. Professor Goldstein's criticisms of his adversary's statements made a profound impression on the audience. He pointed out, amongst other things, that "the caustic" remedy popular with the homeopaths is nothing but common water. The most careful scientific analysis failed to reveal anything else in it. People usually drink water by tumblerfuls, and the homeopathists treat them with single drops of it. Besides water, Professor Goldstein went on to say, the chief remedies of the homeopaths are grains of salt, carbon, and silica, and minute quantities of pounded sugar and spirits. Mr. Goldstein thoroughly exposed the absurdity of the well-known theory of the "dynamic

power," and miraculous effect upon the system of indefinitely minute quantities, which divide the fundamental and small unit into units to the number of thirty figures. This proportion he illustrated by the following example: Take a few pinches of salt and throw it into the middle of the Sea of Ladoga, and then travel to St. Petersburg and take a tumbler of water from the Neva, which draws its waters from that sea, and then you will drink a homeopathic medicine. Homeopathy can only claim one merit, and that is a relative one—in prescribing, after long reflection and profound calculation, a few drops of water, it in no way interferes with the course of Nature.—*British Medical Journal*, No. 1689, p. 1026.

THE INEXORABLE FACTS OF HEREDITY.

"I HAVE drunk whiskey every day for thirty-five years," remarked a gentleman of sixty, rather proudly, "and I don't see but I have as good a constitution as the average man of my age; I never was drunk in my life." He was telling the truth, but to learn the whole truth you would have to study his children. The oldest, a young lady, had perfect health; the second, a young man, was of a remarkably nervous and excitable temperament, as different from his phlegmatic father as possible; the third, a young lady of seventeen, was epileptic and always had very poor health. Did the father's whiskey-drinking have anything to do with these facts? The instance may be duplicated in almost every community. Think over the families of your acquaintance in which the father has long been a moderate drinker, and observe the facts as to the health of the children. The superintendent of a hospital for children at Berne, Switzerland, has found by careful observation, that only 45 per cent. of those whose parents used intoxicating liquors habitually had good constitutions, while 82 per cent. of the children of temperate parents had sound bodies. Of the children of inebriates, only 6 per cent. were healthy. Can any man "drink and take the consequences," or must his children take the consequences? —*The Quarterly Journal of Inebriety*, April, 1893.

SPECIAL ARTICLE.

PRECAUTIONS AGAINST CHOLERA ASIATICA IN BOSTON.

BY J. H. MCCOLLOM, M.D.,
BOSTON.

THE purity of the water-supply and the sanitary condition of a city have such an important bearing on an outbreak of cholera that, in order to fully appreciate the precautions taken in any locality, it is necessary to take a glance at the condition of the water-supply for a series of years, and also to analyze mortuary statistics for a corresponding period. It is generally admitted that the degree of infectiousness of cholera is about the same as that of typhoid fever, and that both diseases are contracted through infected water and polluted food. If cholera gains entrance into a city, all sanitary rules and regulations, all attempts at the isolation of patients are useless if the purification of the water-supply is neglected. The history of the late epidemic of cholera in Hamburg and the almost entire freedom of Altona from the disease are the very best arguments in support of this statement. As is well known, the river Elbe supplies each of these cities. Hamburg did not filter the water; Altona, which is below Hamburg, did do so—hence the difference between the two cities in the amount of disease. It is of interest to note that for a series of years typhoid fever has been much more prevalent in Hamburg than in Altona, a fact that aptly illustrates the parallelism of the two diseases so far as the method of communication is concerned.

In Boston, previously to the introduction of Cochituate water, the death-rate from typhoid fever was very high, being 17.4 per 10,000 of the living, but as soon as the use of this water became general the death-rate commenced to decline until, during the year 1892, the low figure of 2.9 per 10,000 was reached, a rate that compares very favorably with that of London.

Boston has been visited by cholera three times. The first epidemic, of which there is a very full account in print, occurred in 1849. The number of deaths was 601. It is very significant that the majority of cases occurred in houses where wells were used. The second epidemic appeared in 1854. The number of deaths in this epidemic was about one-third as great as in the first epidemic, which may be explained by the fact that the use of Cochituate water had become much more general. The third epidemic, in 1869, was so slight that very little notice was taken of it either in the medical journals or by the daily press. In this last epidemic there were thirty-seven cases and eighteen deaths.

Boston has an area of 37.04 square miles, and an average population to the acre of about twenty. But these figures do not give any idea of the actual condition of the population so far as crowding is concerned, for in some sections there are 213 persons to the acre, and in others there are only three. If cholera should visit Boston, it would naturally be found in the more crowded sections, and it is to these districts that the attention of the municipal authorities is more particularly directed.

The principal portion of the city is well drained by a large intercepting sewer which conveys all sewage to the settling-basins, where it is discharged at the turn of the tide and washed out to sea. Only a few small sewers discharge directly into the harbor, so that the chance of contamination from this source is very slight.

The Charles River, which flows along the northern border of the city, receives the sewage from Cambridge and a few other cities, and is much polluted. During the summer months this stream becomes a source of annoyance, but as its water is not used for domestic purposes, the danger of cholera spreading from this point is very slight.

During the past few months particular attention has been paid to the cleaning of alleyways and passages between parallel streets. The tenement houses, and more particularly the cheap lodging-houses, are frequently inspected by officers from the Board of Health, and although the condition of these places at the present time is not all that could be desired, from a sanitary point of view, yet their condition has been very much improved during the past few years, and more particularly during the past few months.

The number of privy-vaults in Boston is comparatively

slight, and their number diminishes each year. These vaults are under the constant supervision of the Board of Health, are disinfected whenever they become a nuisance, and are emptied by the odorless excavating company. The work is done by contract, and five dollars is charged for every load of eighty cubic feet.

The catch-basins in the streets and the areas about the markets are disinfected by the Board of Health as often as circumstances may require.

Of course, it is of prime importance to prevent the importation of the first cases of cholera, and in order to prevent this new and stringent quarantine-regulations have been adopted. As is the custom in all countries, no vessel can pass quarantine before sunrise or after sunset. The quarantine station of Boston is seven miles below the city at Gallop's Island, which has an area of about twenty-five acres. On this island are a hospital capable of accommodating about fifty patients; two houses of detention which will hold about two hundred and fifty people; a bathing-house containing twenty-eight bath-tubs, each tub being in a separate room and supplied with hot and cold water. Adjoining the bath-house is a steam disinfecting plant, so that the clothing of the immigrants can be disinfected while they are bathing. A truck containing twenty-eight cages runs through the center of the bath-house and is so arranged that each person, without exposure, can place his wearing apparel in a cage, the number of which corresponds to the number of the bath-room. Then the truck is run directly into the disinfecting cylinder, and the process of disinfection by super-heated steam is completed by the time the bath is finished. The disinfecting cylinder is twenty feet long and six feet in diameter, is capable of standing a pressure of forty pounds to the square inch, and is supplied by steam from the quarantine-steamer. On this cylinder an ingenious device, which has proved of great advantage in increasing the penetrating power of steam, is in use. This device consists of the adaptation of the principle of the inspirator, reversed, so that the air is drawn out from the interior of the cylinder. By the use of this apparatus the air is removed from the interior of the cylinder, and then the steam is turned on until a pressure of about twenty pounds is reached, giving a temperature of 250° Fahr., which is sufficient to kill any of the germs of disease. All immigrants from infected ports are required to bathe and to have their baggage disinfected before the vessel leaves quarantine. All suspicious cases are removed to the hospital. Each immigrant is vaccinated, unless he can give satisfactory evidence to the quarantine-physician of having been vaccinated within five years. In many instances the ship's surgeon does the vaccinating on the passage out, and gives a certificate to that effect.

In addition to the quarantine-station itself, an arrangement has been made with one of the city departments for the occupancy, in case of an outbreak of cholera, of one of the adjoining islands, with buildings sufficient to comfortably house five hundred or six hundred people. This island would be ready for use in twenty-four hours, so that in case of a cholera-infected ship arriving at this port, a portion of the passengers could be accommodated at this island, and the remainder at Gallop's Island, so far removed from those actually ill with cholera that there would be no danger of infection. In short, at the quarantine-station in twenty-four hours a thousand well persons could be comfortably housed and removed from all source of infection, and fifty patients could be treated in the hospital. These islands are supplied with Cochituate water and are in direct telephonic communication with the Board of Health.

In the city proper a hospital capable of accommodating fifty patients has been erected. The building is heated by steam and lighted by gas; particular attention has been paid to the ventilation and also to the drainage. By means of a specially devised pot-trap all the drainage from the hospital can be thoroughly disinfected before it enters the sewer. Adjoining the hospital, but entirely distinct from it, is the steam disinfecting-station, which it is intended to use not only for the disinfection of the clothing of cholera-patients, but also for the disinfection of bedding and clothing in cases of other contagious and infectious diseases. The apparatus for disinfection is an iron cylinder twenty feet long, seven feet in diameter, with a capacity of about 692 cubic feet, fitted with the necessary steam-pipes, gauges, and valves. The outer shell is made of steel five-eighths of an inch thick; the inner shell is of galvanized iron one-eighth of an inch in thickness; a coil of perforated steam-pipes is placed at the top of the cylinder; the coil at the bottom is not perforated. The cars, in which the articles to be disinfected are placed, run on tracks into the cylinder, entering at one end and being removed at the other. There is no communication between the chamber in which the infected articles are received and that from which the disinfected articles are removed. The boiler-house and disinfecting apparatus occupy about three-fourths of the building.

In addition to the hospital just described, one of the ferry-boats could, at short notice—as was done last September—be transformed into a floating hospital capable of accommodating thirty patients. Besides, there are a number of portable houses under the charge of the Board of Health that could in twenty-four hours be made available for hospital-purposes.

It is unnecessary to give a detailed description of all the minor arrangements which a possible outbreak of cholera may demand. It is sufficient to say that the gravity of the situation is fully appreciated by the authorities, and that the whole sanitary force of the city would be immediately and effectively employed in an attempt to stamp out an epidemic of the disease.

From this brief *résumé* of the precautions taken against cholera in Boston, it is evident that the quarantine-department is prepared for any reasonable emergency; that hospitals are established within the city limits sufficient to treat all cases of cholera that would be likely to occur; that tenement houses and lodging-houses in which the disease may lurk are under careful supervision; and that careful attention is paid to the removal of filth from all parts of the city. So far as the water-supply of the city is concerned, the chances of its pollution, owing to the stringent regulations of the water board, are reduced to a minimum.

While it is possible that cholera may visit Boston, yet its advent would not find the city unable to cope with it, and there is no reason to fear that there would be a general or widespread epidemic of the disease in this locality.

SOCIETY PROCEEDINGS.

THE AMERICAN LARYNGOLOGICAL ASSOCIATION.

Fifteenth Annual Congress, held in New York City, May 22, 23, and 24, 1893.

FIRST DAY—MAY 22D.

DR. MORRIS J. ASCH delivered the President's Address, reviewing the work of the Association since its formation, in 1879, and referring to the vast strides that have of late years been made in laryngology.

DR. W. PEYRE PORCHER, of Charleston, reported "A Case of Complete Glottic Spasm in an Adult, followed by Unconsciousness and Prolonged Drowsiness." The patient was an unmarried female, fifty-two years old, at the menopause, who complained of difficult respiration at night, with frequent, terrifying nightmares, which she attributed to an attack of influenza several months before. She would be awakened by a fit of coughing, accompanied by a feeling of choking or gagging. The tonsils were found to be small and were thoroughly cauterized with the galvano-caustic knife. On the following morning, on attempting to drink some coffee, which was not hot, the woman was seized with giddiness and became unconscious. The attack lasted but a short time. Persistent drowsiness, lasting several weeks, followed the attack, indicating marked implication of the brain-centers. The patient made a good recovery, and there has been no recurrence. On account of the known tendency of hot coffee to enter the larynx, and in the absence of any other exciting cause, the case was regarded as one of laryngeal vertigo or complete glottic spasm.

DR. JONATHAN WRIGHT, of Brooklyn, narrated the history of a case of spasm of the glottis, in which the patient was brought into the hospital unconscious and tracheotomy was performed in order to save her life.

DR. J. W. GLEITSMAN, of New York, referred to a case of laryngeal vertigo produced by fits of coughing in a patient with enlargement of the lingual tonsil.

DR. W. E. CASSELBERRY, of Chicago, referred to the not uncommon cases of reflex spasm of the glottis in children, due to irritation of the faucial tonsils, the nasopharynx or the nasal mucous membrane, and associated with acute laryngitis. In another class of cases the spasm of the glottis is associated with epilepsy, or *petit mal*, and then again there are cases of true laryngeal vertigo. In treating these cases it is most important to restore the mucous membrane of the upper air-passages to a thoroughly healthy condition.

DR. S. W. LANGMAID, of Boston, said that laryngeal vertigo is often due to digestive disturbance. Gouty individuals are particularly subject to it. The diathesis of such patients should be always carefully looked into.

DR. J. O. ROE, of Rochester, said that some cases of laryngeal vertigo are due to direct irritation of the larynx. In one case that has been described it was caused by extreme sensitiveness of the arytenoids.

DR. D. BRYSON DELAVAN, of New York, read a paper entitled "The Withholding of Statistics in Operations for the Relief of Cancer of the Throat," urging that painstaking and accurate accounts should be published of the history of every malignant growth removed from the upper air-passages, whether the operation be successful or otherwise, so that more reliable data can thus be obtained.

DR. J. SOLIS-COHEN, of Philadelphia, said that there are various reasons that prevent the publication of accurate statistics of operations. Many operations are performed in the hospital, and the surgeon does not take time to record them. Then, again, a case may terminate fatally on account of neglect in the after-treatment; this happens not infrequently, and such cases impair the value of statistics. As a man gets older, he loses confidence in statistics, to a large extent, and depends more on his own experience and the results of his own work. He becomes more careful in the selection of his cases, and seems to know or feel that in certain cases the results will or will not prove successful.

DR. W. E. CASSELBERRY, of Chicago, read a paper on "Arthritis Deformans of the Larynx." He detailed the history of a woman, fifty-eight years old, who suffered from laryngeal dyspnea, marked inspiratory stridor, and some laryngitis. The vocal bands could not be abducted on account of an ankylosis of the arytenoid eminences. The patient had a general arthritis deformans, affecting the joints of the hands and feet, as well as the larger joints throughout the body. The attacks of laryngeal dyspnea were self-limited and corresponded with the exacerbations of the constitutional disease. During the course of the attack local treatment was employed to keep the larynx free from mucus; otherwise the operation of tracheotomy could not have been avoided. Dr. Casselberry expressed himself in accord with the theory that arthritis deformans is a disease quite distinct from rheumatism, on the one hand, and gout, on the other hand, and that its laryngeal complications are entitled to a separate discussion. In the case reported, the patient had been treated for a time on the supposition that her disease might be rheumatism or gout, but without any good effect.

DR. R. P. LINCOLN, of New York, read a paper entitled "Recurrence at a New Site of a Laryngeal Growth (Papilloma) in a Case Already Reported under the Title 'Evulsion of a Laryngeal Tumor which Returned Twenty-two Years after its Removal by Laryngotomy.'" The case was that of a woman who, in 1862, had a papilloma removed from her larynx by means of the forceps. The growth recurred, and in 1867 was again thoroughly removed, this time by laryngotomy. There was then no recurrence for twenty-two years. In 1889 a tumor was found springing from the posterior third of the right vocal band. This was removed and its site thoroughly cauterized with the electro-cautery. The growth proved to be an ordinary papilloma. The patient remained free from hoarseness until within six months, when a new growth was discovered springing from the anterior portion of the left vocal band. This was removed and also proved to be a simple papilloma.

DR. J. SOLIS-COHEN said that while the recurrence of papillomatous growths is rare, he has seen some remarkable instances of it. In one patient under his care, a school-teacher, who had a number of small sessile papillomata, a new growth could actually be seen springing from the left vocal band while he was removing the older ones. In the majority of cases in which recurrence takes

place, this is probably due to incomplete removal of the original growth. Small portions of the growth are easily overlooked. As regards the method of operation, a skilful laryngologist is just as competent to remove the growth thoroughly by the intra-laryngeal route as the surgeon is by the external method.

DR. F. I. KNIGHT said that when the growth is removed with the forceps or loop, more or less of it is necessarily left behind in the majority of cases, and it would seem strange that recurrence is not more frequent. When the growths are multiple, recurrence may be expected.

DR. DELAVAN referred to the difficulty of diagnosis in cases of apparent papilloma. The superficial appearance of the growth may be deceptive. The tendency to repeated recurrence should always suggest the possibility that the lesion is a more serious one than a simple papilloma.

DR. GEORGE M. LEFFERTS, of New York, read a paper on "Intubation in the Adult." He pointed out that intubation in the adult has of recent years been employed for intra-laryngeal conditions that were unheard of in connection with the operation in the past, and their number is rapidly increasing. The subject is still in its infancy, and ample and reliable statistics are yet wanting upon which to formulate definite propositions. The objects for which the operation is undertaken are: 1st, to overcome the most urgent acute symptoms of obstructed laryngeal respiration; 2d, to restore as far as may be possible, the interior of the stenotic, larynx to its normal caliber; 3d, to obviate the necessity of resorting to either laryngotomy or tracheotomy; and, finally, to facilitate the withdrawal of the tracheal canula in certain cases in which this is attended with difficulty. Among the suitable or probably suitable conditions of the adult larynx that may demand intubation are the following: Acute or chronic syphilitic affections of the larynx; dyspnea dependent upon acute bilateral abductor paralysis of constitutional origin; dyspnea dependent upon abductive immobility of the vocal bands, due to ankylosis of the arytenoid articulations; fracture and displacement of the laryngeal cartilages from direct injury; acute dyspnea due to edematous infiltration or to the development of hematomata, usually of the arytenoepiglottic fold; chronic stenosis; compression of the larynx or upper trachea by external causes. Intubation has been successfully performed for the relief of dyspnea dependent upon chronic edema in laryngeal tuberculosis; in acute inflammatory conditions of the adult larynx and their results; in acute perichondritis, especially of the cricoid; in spasm of the glottis; in chronic laryngitis with hypertrophic changes; in atresia of the larynx; to aid in the removal of foreign bodies or laryngeal neoplasms; in cicatricial conditions, etc.

DR. SIMPSON said that in adults the tube is best introduced with the aid of the mirror. The parts can first be sprayed with cocaine.

SECOND DAY—MAY 23D.

DR. J. C. MULHALL, of St. Louis, read a paper entitled "Rhinitis Edematosa; Laryngitis Hiemalis." The condition described consists in a serous infiltration of the connective tissue overlying the inferior or middle turbinated bone. It is intermittent in character, and may be general or local. In one case the condition resembled a cyst, causing intense pain, lachrymation, and a flow of thin serum. The swelling obstructs the nasal respiration; it may be migratory in character. It may be acute or chronic. When the swelling is punctured with the bistoury serum slowly exudes. Cocaine has little or no influence in causing the mass to shrink. The condition may occur in connection with bronchial asthma, but in the majority of cases asthma is absent. The affection is certainly a neurosis, yet it stands apart from those morbid conditions that are caused by an extrinsic excitant, as is rose-cold, etc. In most cases there is a history of hepatic derangement, and the disease is probably of biliary origin. As regards treatment, spraying, etc., is contra-indicated. Scarification may be of benefit. In chronic cases, existing deformities of the nose should be corrected. The principal efforts should be directed toward improving the condition of the alimentary canal.

Laryngitis hiemalis—winter laryngitis—is a variety of subacute laryngitis in which the secretions are rapidly changed into adhesive crusts. Cold weather is the important factor in its production. There is complete aphonia. The crusts often cling to the surfaces of the true bands and the arytenoids. The evidences of inflammation in the larynx are slight. The condition differs from laryngitis sicca. Improvement rapidly follows removal of the crusts and the use of a spray containing vaselin and eucalyptol.

DR. SAMUEL JOHNSTON, of Baltimore, reported "A Case of Nasal Polypus projecting into the Naso-pharynx, with Specimens." The patient was a man, sixty years old, who gave a history of nasal obstruction, difficulty in swallowing, and impaired voice. A non-vascular tumor was observed to protrude between the border of the soft palate and the post-pharyngeal wall. This was removed with the snare and was found to be about the size of a pullet's egg, with a smaller one adjoining, and had its attachment by a narrow pedicle to the inferior turbinated bone. One year later the symptoms reappeared and a mucous polypus was found hanging freely over the velum and almost touching the base of the tongue. This tumor measured two inches in length and three-quarters of an inch at its thickest part.

DR. J. SOLIS-COHEN, of Philadelphia, read a note on "Buccal Voice," illustrated by presentation of a patient who phonates without a larynx and without the use of his lungs. The patient was a man whose larynx had been removed fourteen months previously for epithelioma. In order to prevent the occurrence of septic pneumonia, the trachea was stitched to the skin by several silk sutures. There has since been no communication between the trachea and the mouth. Some months after the operation the man was able to make a clucking sound. He was encouraged in doing this, and has made wonderful improvement. He is now able to speak; his voice is well modulated and can be heard for a considerable distance. After the operation a slight fistula remained in the track of the wound, and in order to close this the skin was inverted and stitched together. The beard on these inverted flaps of skin has continued growing, giving a very curious appearance to the inner surface of the wound. The man wears a tracheotomy-canula, which he removes during sleep. He prefers to wear it during the day, as it gives him some support and

allows him to talk better. After the operation the man was nourished per rectum. Eighteen years ago a papilloma was removed from his larynx. Dr. Cohen expressed the opinion that the man was probably aided in speaking by the constrictor muscles of the pharynx.

DR. JOHN W. FARLOW, of Boston, reported "Two Cases of Tuberculosis of the Nose." One was that of a woman, aged twenty-three years, with tuberculous ulceration of the lower and anterior part of the left septum. Exploration of the chest was negative. Examination of the crusts from the nose failed to show any tubercle-bacilli. There was no history of syphilis. The condition of the nose was typical of tuberculosis, and the ulcers healed after thorough curettement and the application of the cautery and lactic acid. The second case was in a woman seventy-one years old, who had tuberculous growths projecting from the anterior part of the right septum. There were no pulmonary symptoms. The growths were removed from the nose, and were pronounced by two pathologists to be undoubtedly tuberculous.

DR. C. C. RICE, of New York, read a paper on "The Use of Ozone in Atrophic Catarrh." He related that the results obtained during the past two months from the use of ozone in the treatment of catarrhal diseases have been satisfactory enough to warrant calling attention to the use of this remedy in atrophic catarrh. The gas possesses powerful oxidizing, germicidal, and bacteriologic properties. Applied to the nose, it causes a mild smarting of the nasal mucous membrane, lasting for several hours. The secretion of mucus is markedly increased. The milder cases of atrophic catarrh are very quickly benefited by the treatment and remain improved for several days, but most of them relapse somewhat. In the more severe cases the benefit is not obtained so quickly. Whether permanent moistening of the mucous membrane and decrease of secretions can be obtained by the use of ozone can be determined only after a longer trial.

DR. JONATHAN WRIGHT, of Brooklyn, read a paper entitled "Remarks on the Structure of Edematous Nasal Polypi;" giving the results of a long series of histologic experiments, the material for which was obtained from about 150 individuals. A few of these were normal cases; the others were suffering from various pathologic conditions of the upper air-passages.

DR. J. C. MULHALL, of St. Louis, took exception to the statement that atrophic rhinitis is commonly the result of a preceding hypertrophic rhinitis. While this is the view generally held, he has long been of the opinion that, in the vast majority of cases, atrophic rhinitis is a disease commencing in childhood and often the result of an acute inflammatory process.

DR. JOHN O. ROE, of Rochester, N. Y., read a paper on "Deviations of the Nasal Septum and Their Correction." He referred to the great frequency of this form of nasal obstruction; according to different authorities, it has been found in from 37 to 96 per cent. of all cases that have come under their observation, and in two-thirds of these the deviations were confined to the cartilaginous and the anterior portion of the osseous part of the septum. Such deviations are mainly due (1) to traumatism, and (2) to defective development. The treatment may be either palliative or radical. The former includes the adoption of proper measures to remove the exciting cause, such as turbinated hypertrophy, osseous growth of the turbinated bones, adenoid growth, and such other conditions in children as may cause nasal obstruction and interference with the proper development of the nose. Radical treatment may be divided into non-surgical and surgical. The former consists in the employment of pressure upon the convex side of the deflected septum. The latter consists in correcting the deformity by the use of the forceps after all bony spurs and ridges have been removed by the knife, gouge, etc.; by the use of the galvano-cautery, chromic acid, electrolysis, or by incision. Dr. Roe exhibited a number of forceps he has devised for the purpose of fracturing and straightening the septum. After this is accomplished the septum is held in place by a suitable dressing. The nasal cavity should first be cleansed with a 1 to 3000 mercuric-chlorid solution. The dressing should be thoroughly aseptic, and should be left undisturbed for four or five days.

DR. T. A. DEBLOIS, of Boston, read a paper on "The Cautery in Uvulotomy," recommending the galvano-cautery, in preference to the knife or scissors, in operations on the uvula. The parts are first thoroughly sprayed with cocaine; the platinum loop is then passed around the appendage, and as soon as the cautery is felt on the posterior surface of the uvula it is drawn tight by the palatine muscles, and by pulling in an opposite direction with a pair of forceps, the cut can be nicely bevelled; when the wound heals it leaves a well "tapered" stump. There is no hemorrhage, and the after-pain is not so severe as when the uvula is clipped off with the knife or scissors.

DR. CLINTON WAGNER, of New York, read a paper entitled "Salivary Calculi, with Reports of Cases." He stated that salivary calculi are formed by the deposit of earthy salts (chiefly calcium phosphate) from the saliva in the excretory ducts leading from the gland, or in the body of the gland itself. The cause of the deposit is an obstruction to the flow of saliva either to or through the excretory duct. Salivary calculi are most frequently found in the sublingual gland or its excretory duct (the duct of Bartholine) and usually appears as tumors under the tongue on one side or the other of the frenum; they are sensitive upon pressure, and occasionally fluctuating. If the body is lodged in Wharton's duct, there will be enlargement of the submaxillary gland, in addition to the sublingual tumor. The concretions are sometimes found in Steno's duct, in which case there will be enlargement of the parotid gland. The subjective symptoms are pain and difficulty in mastication and deglutition, with more or less impairment of speech. The treatment consists in free incision by the knife. For purposes of diagnosis, an exploration can first be made through a small opening by means of a probe.

Dr. Wagner detailed the histories of four cases of salivary calculi; in one the calculus weighed 93½ grains the largest on record.

THIRD DAY—MAY 24TH.

DR. HARRISON ALLEN, of Philadelphia, made some remarks on "Congenital Defects of the Face, with Exhibition of a Rare Form of Cleft Palate." He exhibited the skull of a Seminole Indian, illustrating a rare form

of cleft palate, the cleft being directly in the median line. The ordinary form of cleft palate results from the failure of the fronto-nasal process to descend to a level with the sides of the face at the time when these are being developed from right to left. A fissure is thus left on one or both sides of the face, as in the ordinary form of cleft palate. Among other abnormities presented by the skull was a spur of bone, exercising direct pressure on the turbinated bodies on the left side. Dr. Allen expressed the opinion that many cases of nasal headache, catarrh, etc., are due to pressure-effects of congenital origin, and that deviations of the nasal septum are also in the large majority of cases due to congenital causes, and not to traumatism, as is generally believed.

DR. J. H. BRYAN, of Washington, D. C., read a paper entitled "On Some of the Manifestations of Syphilis of the Upper Air-passages," reporting three cases of syphilitic disease of the throat. One was a case of stenosis of the larynx occurring in a woman who had acquired syphilis through her husband. The second was a case of syphilitic tonsillitis undergoing suppuration, although the patient denied a specific history. The third was a case of congenital syphilis of the pharynx and larynx. The patient was a girl, aged twelve years, who also had an interstitial keratitis in both eyes, and suffered from deafness; the notched teeth were absent.

DR. MULHALL suggested that in the second case narrated, the suppuration of the tonsil might have been coincident with the syphilis, but independent of it. Dr. Mulhall said he was associated with Mr. Hutchinson for a number of years as his assistant, and saw many cases of hereditary syphilis in which the teeth were not notched. On account of their more defective nutrition, hereditary syphilis produces in English children much greater ravages than in children in this country.

A paper on "An Improved Method of Draining the Antrum of Highmore," by Dr. GEORGE W. MAJOR, of Montreal, was read by title.

DR. JOHN N. MACKENZIE, of Baltimore, read a paper on "Aspergillus-mycosis of the Antrum Maxillare." He reported the case of a patient who for a long time had suffered from antral disease, with the occasional passage of a false membrane from the antrum. Some of the membrane was examined microscopically, and was found to consist of a number of layers, one of which was covered with a mass of *aspergilli*—probably *aspergilli fumigati*.

DR. W. K. SIMPSON, of New York, reported "A Case of Sarcoma of the Soft Palate, Illustrating the Degeneration of a Benign (Papilloma) into a Malignant Growth; Removal of the Soft Palate; Death." The patient was a girl, who, at sixteen years of age, had multiple papillomata of the soft palate, which were removed. Sixteen months afterward there was a recurrence of the growths. They were removed with the galvano-cautery knife. After this a number of recurrences rapidly took place, and a microscopic examination of the growth showed it to be sarcomatous. The patient complained of no pain; there was some difficulty in swallowing and slight thickness of speech. The cervical glands were not enlarged. In August, 1890, the entire soft palate was removed under cocaine, one dram of a 4 per cent. solution of the drug being employed by spray and subcutaneously, without ill-effects following. Two months after this operation signs of recurrence were noticed; the growth rapidly extended to the naso-pharynx, and the patient died of inanition in April, 1891, two years and three months after the appearance of the apparently benign papilloma, and eight months after the final operation.

DR. ROALDES cautioned against placing too much faith in the report of the microscopist. Six years ago he removed a fibroid tonsil from a member of his own family. He submitted sections to a number of pathologists, both in this country and abroad, and all pronounced it round-celled sarcoma. The case has been carefully watched, and there have been no signs of recurrence. If the advice of the pathologists had at once been acted on, and an operation performed, the case would have been included among the successful cases of operation for sarcoma.

DR. BEVERLEY ROBINSON, of New York, opened the discussion upon "Diphtheria: Its Prophylaxis and Treatment." He confined himself chiefly to the causation of the disease and the methods of isolation and disinfection. In order to stop its development, proper attention must be given to house sewage; closets, cellars, etc., must be kept clean and well ventilated. When the disease actually occurs, complete isolation should be insisted on. In doubtful cases the exudate from the throat should at once be submitted to bacteriologic examination. No one should be allowed access to the patient, excepting the physician and the nurse. Perfect isolation can only be obtained in suitable hospitals especially erected for the reception of patients suffering from contagious diseases. Proper attention should be given to the ventilation of the sick-room, the disinfection of the discharges, etc. In case of death, public funerals should be forbidden. Strict rules should be enforced for the protection of schools. The bacilli of diphtheria may be found in the pharynx as long as five weeks after the disappearance of the membrane. The physician in attendance upon the case should at every visit be provided with a gown and hood, which can be disinfected on his departure. The room, bedding, etc., should be thoroughly disinfected. Among the most satisfactory disinfecting agents to be used in these cases are eucalyptus, turpentine, carbolic acid, creasote, and tar.

DR. ROBINSON stated that despite the advances made in the bacteriologic investigations of diphtheria, the treatment is still uncertain and unsatisfactory. As regards the internal treatment, many drugs have been advocated. Mercuric chlorid has been highly praised by some, while others have seen no especially good results follow its use. In the Friedrichshain Hospital at Berlin no internal treatment at all was employed, and yet there was 64 per cent. of cures. At the Willard Parker Hospital the only constitutional treatment employed at present is to give alcoholic stimulants throughout the course of the disease to those showing any tendency to heart-failure. As regards local treatment, sprays, irrigations, or gargles can be employed, in accordance with the age and strength of the patient. Dr. Robinson stated that in his experience it is more useful and satisfactory to disinfect and cleanse the throat by means of sprays employed not directly through the mouth, but indirectly through the nose. In this manner the medicated solution is brought into more complete contact with nearly every portion of the diseased membrane

than in any other way, and with less distress and fatigue to the sick child. The nasal sprays should be rather coarse, never too strong, and repeated every hour or two, depending on the malignancy of the case. For spraying purposes, mild solutions of carbolic acid, with lime-water, borax, or sodium bicarbonate, can be used, or very mild solutions of mercuric chlorid. The solutions of carbolic acid should not be stronger than 1 or 2 per cent: those of mercuric chlorid, 1 to 4000, 1 to 8000, or 1 to 10,000. As regards the value of carbolic acid in this disease there is a difference of opinion; by some it is considered to be useless and even harmful. From time to time the fauces and tonsils and pharynx should be given a thorough cleansing with the same spray or by means of a syringe. Local applications with a swab or brush can also be made with mercuric solutions, 1 to 500, or even 1 to 250. Tincture of ferric chlorid in glycerin and water, or a tablet of mercuric chlorid in solution in water or milk can be given, followed by liquid food and alcoholic stimulants. Vapors of turpentine, carbolic acid, and eucalyptus should be used more or less constantly in the room.

DR. MULHALL referred to the value of "house posting." Personal prophylaxis is of the greatest importance in this as in other contagious diseases. The general condition of children should be looked after; enlarged tonsils and other morbid conditions should be rectified. Dr. Mulhall has found the best method of treatment to consist in sterilizing the upper air-passages and keeping up the nutrition of the patient. The sterilization of the nose and throat can be done with very little discomfort to the patient by means of the common household syringe. It is important to disinfect the posterior nares, as the absorption of toxic matters in that region is very rapid. This can be done by means of a little glass syringe.

The further discussion of this question was postponed until the next meeting of the Association.

The following officers were elected for the ensuing year:

President—Dr. D. Bryson Delavan, of New York.

Vice-Presidents—Dr. J. C. Mulhall, of St. Louis; Dr. W. E. Casselberry, of Chicago.

Secretary and Treasurer—Dr. Charles H. Knight, of New York.

THE AMERICAN CLIMATOLOGICAL ASSOCIATION.

Tenth Annual Meeting, held at Philadelphia, May 25, 26, and 27, 1893.

FIRST DAY—MAY 25TH.

DR. R. G. CURTIN, of Philadelphia, delivered the "President's Address." He extended a cordial welcome and reviewed the history of the Association. He pointed out the value of the material added to the literature of climatology, and referred to the recent deaths of members. He made the following suggestions: that the discussions be reported by a competent stenographer; that a Committee on Health-Resorts be appointed, to collect data and report yearly to the Society as to elevation, meteorology, etc.; that a Committee on Mineral Springs be appointed, to collect information as to the composition of waters and their medicinal uses; that the Association take up for consideration important national questions, such as a rigid quarantine to bar out epidemics, the preservation of forests, a national leper colony; that the standard of membership be raised and a limit placed to the number of members; that the interest of well-known bacteriologists be enlisted in the work of the Association.

DR. R. G. CURTIN also read a paper entitled "Angina Pectoris and Morbid Anginose Symptoms Caused by Heavy Blows, Crushing Injuries, and Chronic Inflammation around the Heart." In a considerable number of cases of angina pectoris that had come under observation, there was a history of antecedent traumatism, or an association with chronic inflammatory disease around the heart. In a second group of cases there was a history of traumatism. In both, the symptoms may have been dependent upon the existence of pericardial adhesions.

In this connection it is interesting to note how common it is to find the layers of the pericardium adherent at autopsies, in cases of aneurism and organic disease of the heart associated with anginal symptoms. In those sufficiently strong to respond to treatment, the prognosis is quite good; but this should be guarded in the old, intemperate, or overworked.

In most cases nitro-glycerin relieves the symptoms, but this drug often fails because it is not given frequently enough. In a bad case it should be given every hour or two. It will ward off paroxysms, but it is not curative. The hypophosphites act as good curative agents, and should be given continuously for months. Cod-liver oil is often beneficial, especially in cases in which flesh has been lost. Arsenic is a tonic and a curative agent. Protection to the chest by added clothing, or a cotton, flannel, or woollen pad is to be recommended. In extreme cases the patient should be kept in bed for rest and protection. The diet should be restricted and work diminished. Temperance in all things should be directed.

DR. J. H. MUSSER, of Philadelphia, related the case of a patient, forty-three years old, who had a severe attack of pericarditis, and afterward, while in apparently good health, had an attack of angina pectoris. This was the beginning of an illness that resulted fatally at the end of two months from cardiac aneurism. The angina pectoris was due to thrombosis of the coronary arteries.

DR. QUIMBY detailed the case of a woman of twenty-eight or thirty, who was greatly disturbed by exercise, but who lived an easy and comfortable life for eight or ten years, sitting in bed. She had distinct adhesions from suppurative pericarditis.

DR. A. H. SMITH, of New York, expressed the opinion that a large proportion of cases of angina pectoris may be traced to a disproportion between the muscular power of the heart and the resistance to be overcome.

DR. LEONARD WEBER, of New York, pointed out the distinction between true angina and pseudo-angina. In three cases of true angina pectoris there was sclerosis of the coronary arteries consequent upon gout, syphilis, or over-exertion in athletics or severe mechanical work.

DR. F. P. HENRY, of Philadelphia, referred to a case of aortic stenosis and insufficiency, in which one or more attacks of angina occurred daily. The attacks are not brought on by exertion, nor can they be brought on

voluntarily; the patient is constantly in bed, and yet never fails to have an attack during the day. After being placed on tincture of aconite the attacks ceased, and have not recurred for eight weeks. The man is now up and going about, and practically well. On one occasion he was greatly shocked by the escape of an inmate of the ward for the detention of insane patients, who ran into the ward in which this patient was; but he had no attack, though there must have been a great disproportion between the tension of the vessels and the action of the heart.

DR. J. M. ANDERS, of Philadelphia, read a paper entitled "Seasonal Influence in Erysipelas, with Statistics." As the result of a study of 2010 cases from various hospitals, the conclusion was reached that erysipelas is, to a considerable extent, dependent upon seasonal influence. Certain climatic elements have a decisive, though perhaps slight, causative influence. Temperature has least, and mean relative humidity the most intimate connection with the disease. A low barometer and mean relative humidity invariably correspond with the period in which the number of cases is largest; and the highest relative humidity with the months with fewest attacks. Erysipelas is not, to the same extent as chorea and rheumatism, related to the seasonal variations in the totality of human illness. The mortality-rate is little, if at all, affected by seasonal influence.

DR. S. D. RISLEY, of Philadelphia, read a paper on "Ocular Disturbances Due to Climatic Influences." He pointed out the difficulty of differentiating between climatic influences and racial peculiarities, on the one hand, and the habits and peculiarities of immediate environment, on the other hand. Statistics and clinical reports of ophthalmologists in Europe and different sections of our own country show that certain forms of conjunctivitis and corneal disease are more prevalent in one part of the world than in another. In Europe, cases of trachoma are much more numerous than in Philadelphia; and in the western section of our own country a relatively large number of patients is under treatment for rebellious conjunctival disease. This is to be accounted for by the prevalence of high winds, carrying clouds of dust, by exposure to strong light in agricultural districts, or the strong snow-light in winter. The deleterious influence of the alkali plains on mucous membranes has been pointed out. This alkaline dust, doubtless, causes chronic inflammation of the conjunctiva and cornea.

Another form of ocular disturbance due to climatic influence is of malarial origin. The conjunctiva, cornea, and deeper tunics are affected. The most frequent affection is that of the cornea, which does not conform to other recognized forms of corneal disease. This is periodic in character; and recovery takes place under antiperiodic doses of quinine or arsenic. On the day of the paroxysm, the eye is much worse; and as there is ordinarily tissue-change (corneal epithelial abrasion), the eye is not well between attacks, as there is not time for repair. In one of two cases of recurring retinal hemorrhages, in which the attacks came on in multiples of seven days, the corpuscles of Laveran were found.

There are forms of rheumatic ocular disturbances that are made worse by a cold, moist climate. One case presented optic atrophy, with amblyopia that appeared to be a result of high altitude, recovery taking place near the sea-level. The treatment included the chlorids of iron, arsenic, mercury, and strychnine internally, and a weak collyrium of eserine to be used morning and evening.

DR. T. J. MAYS, Philadelphia, read a paper entitled "The Management of the Convalescent Stage of Phthisis," in which he dwelt upon the necessity for care in the management of the convalescent period of pulmonary tuberculosis. In the active stage, according to Dr. Mays, nothing is so potent for good as protracted rest, and nothing so harmful as ill-advised exercise. Next in importance to rest is nutritious food, such as freshly expressed beef-juice, beef-powder, beef, eggs, milk, oysters, etc., and drug-medication.

After the patient has been so far restored as to be able to go to work, he must avoid becoming tired and forego all physical strain; he may become fatigued, if he is readily refreshed by rest and food; but if he tires himself so that he is constantly exhausted, there must be excessive irritation somewhere, and the body is wasting its resources too rapidly. An abundance of rich, nutritious food should be taken. Pulmonary gymnastics should be practised, so that the lungs may be fully expanded. Deep voluntary breathing in the open air, with closed mouth, should be encouraged at intervals of an hour or two throughout the day, for ten or fifteen breaths in succession at a time. The hands may be brought above the head during inspiration and gradually brought to the side in expiration. The breathing of compressed and rarefied air is the most powerful means at our command for increasing the respiratory capacity. Physical exercise within limitations is desirable during convalescence. One of the best forms is walking; but care must be taken to avoid fatigue. The selection of a suitable occupation is of importance, and is often attended with difficulty. If the previous occupation has proved injurious it must not be resumed.

DR. SMITH pointed out that in the early stages it is necessary to determine whether a lesion of nutrition is the primary condition and the pulmonary lesion secondary, or the reverse. In the case of an individual who has been engaged in a sedentary occupation and the nutritive powers have become weak and there is depression, the gain from proper exercise in improving the nutrition would be greater than the loss that might result from conservation of vitality. If, on the other hand, the pulmonary difficulty has taken precedence, then the reasoning of Dr. Mays holds good, and the forces must be conserved.

DR. OTIS, of Boston, emphasized the fact that but few individuals leading ordinary lives breathe fully and properly.

SECOND DAY—MAY 26TH.

DR. A. C. ABBOTT, of Philadelphia, read a paper entitled "Considerations Concerning Asiatic Cholera," which is to appear in a subsequent number of THE NEWS.

DR. E. O. SHAKESPEARE, of Philadelphia, read a paper on "Public Quarantine Against Cholera." He emphasized the importance of placing quarantine under the uniform direction of the central government; and not submitting it to the whims or inefficiency, or lack of

knowledge, or lack of backbone of local quarantine officers, who are especially liable to be influenced by the mercantile interests, to the detriment of the people behind the great ports.

He pointed out that this country is exposed to infection from cholera almost exclusively by the immigrant, and it is irrational for a country in which such a danger does not exist, as in England, to assume that the conditions are the same here as there.

DR. JUDSON DALAND, of Philadelphia, read a paper on "Recent Agencies Used in the Treatment of Cholera." In the way of prophylaxis, it is only necessary to prevent the swallowing of the cholera-organism. Ordinary water and uncooked or partially cooked vegetables, fruits, and salads are to be avoided. Boiled or distilled or bottled waters may be used. Scrupulous care as to personal cleanliness should be observed. Attacks of indigestion should be avoided, and all food taken should be easily digested and nourishing. If the hands have become infected with cholera-germs in any way, they may be sterilized by dipping in a 1 to 500 mercuric-chlorid solution.

In the premonitory stage the patient should be kept in bed, and be protected from cold. The food should be of the simplest character, preferably boiled milk, boiled rice, milk-toast, in small quantities, at intervals of two hours. The administration of five grains of pepsin with the food is of benefit. As acids tend to destroy the cholera-bacilli, one of these should be administered, hydrochloric acid preferably, for an adult from thirty to forty drops in a tumbler of water. Aromatic sulphuric acid has been used with success.

In the evacuant stage or stage of collapse, the best means for supplying the system with liquid is the subcutaneous injection of water containing from 6 to 10 per cent. of sodium chlorid—two small teaspoonfuls to a quart of distilled hot water (110°), to which two ounces of brandy may be added. A small aspirating needle and canula, attached to the rubber tube of an ordinary fountain syringe, are all that is needed. The best point of introduction is in the flank between the ribs and the crest of the ilium. The apparatus should be sterilized, and all antiseptic precautions taken. The first injection in an adult should be two quarts. Intestinal disinfectants should be used. A 2 per cent. solution of tannic acid should be slowly introduced into the rectum, using a rubber tube, one-quarter inch in diameter, having one outlet one-half inch from the extremity, and another on the opposite side two inches from the extremity; the terminal portion is closed and rounded. This should be oiled, warmed, and slowly introduced into the rectum by a slight rotary motion a distance of about ten inches. This tube should be connected with an ordinary fountain syringe. Heat may be supplied by means of the hot plunge-bath, repeated as often as desirable; and hot air may be conducted beneath the bed-clothing; hot-water bags, hot-sand bags, hot bricks, may be used; or a water bed may be filled with hot water.

The best method of administering stimulants is by deep hypodermatic injection, which may be repeated as often as indicated.

As the stomach often contains choleraic liquid, it is advisable to thoroughly irrigate this viscus with hot tannic-acid solution. Peptonized milk, two ounces every two hours, may be used. If not well received, it may be surcharged with carbonic-acid gas, or koumyss may be substituted. Iced champagne or carbonated distilled water may be given.

If intense pain and muscular cramp be present, morphine, gr. $\frac{1}{6}$, atropine, gr. $\frac{1}{100}$, may be injected into the muscles.

In the stage of reaction, the quantity of liquid food and liquid may be increased; the hydrochloric acid should be continued. If suppression of urine persists, hypodermatoclysis may be continued at intervals of eight hours. To facilitate digestion, five grains of pepsin should be administered with the hydrochloric acid. In favorable, uncomplicated cases the amount of nourishment should be gradually increased, passing from liquid to more solid food, bread saturated with milk, junket, poached white of egg, etc., and returning to ordinary food. If the typhoid state remains, hypodermatoclysis should be repeated once or twice daily; and strychnine, gr. $\frac{1}{40}$, and quinine, 3 grains, may be given every four hours, with hydrochloric acid and pepsin.

DR. J. H. MUSSER, of Philadelphia, presented a communication entitled "Notes on Tuberculous Pleurisy." He pointed out that the diagnosis is based upon the prolonged impairment of health in a person usually past thirty, in conjunction with the physical signs of thickening of the pleura. The sputum is usually mucous or muco-purulent, and contains no tubercle-bacilli early. There is no advanced lung-destruction. Cough and dyspnea are present out of proportion to the physical signs. Palpation and inspection, in addition to percussion and auscultation, are important means of diagnosis.

The prognosis is comparatively good; the patients usually recover, though they may never regain full strength and weight.

There is no specific treatment. Of importance are the general management, the diet, and remedies for the gastro-intestinal catarrh, together with proper respiratory gymnastics. During a certain period of the day it is well for the patient to stay in bed. Opium may be indicated in small, stimulating doses.

DR. JOHN W. BRANNAN, of New York, read a paper on "Phlegmonous Angina and Its Treatment by Early Incision." He stated that until recently this condition was included in tonsillitis, although in four-fifths of the cases the abscess forms outside of the gland.

Quinsy is not a rare disease, and is usually first seen by the family physician. A severe case is never a light matter to the patient, though the prognosis is usually favorable; in most cases pus forms, and the patient is miserable until this is evacuated. Some oppose instrumental interference, but it is the general practice to let out the pus as soon as its situation can be determined. This is followed by immediate relief. Scarification is of no benefit, and usually aggravates the condition.

In the great majority of cases the abscess opens in the soft palate. The puncture is made through the anterior pillar of the fauces, with good illumination. It is important to relieve the tension of the parts, even if suppuration has not taken place. Unless there are signs of pointing elsewhere, the incision should be made through the soft palate directly backward. If ordinary surgical care is exercised there is no danger of wounding the internal

carotid artery. In cases of deep-seated inflammation, in which the pus comes slowly to the surface, erosion of the arteries in the neighborhood may take place; and the surgeon must be prepared to deal with arterial hemorrhage at the moment the abscess discharges into the pharynx.

DR. CARL VON RUCK, of Asheville, read a paper entitled "A Contribution to the Results of Treatment of Pulmonary Tuberculosis by Professor Koch's Method." He detailed the further progress of twenty-five cases of pulmonary tuberculosis treated with tuberculin, and reported two years previously. In the five cases treated in the early stage recovery has taken place and no relapse has occurred.

Of seven more advanced cases final recovery took place in six; relapse in one, followed, however, by improvement.

Of thirteen far-advanced cases, death took place in seven; six are still alive, three continuing greatly improved, and three others remain improved.

It is not possible to mathematically demonstrate the share attributable to the treatment with tuberculin, but it must be admitted that these results are better than have been obtained by any other mode or combination of treatment.

The proper selection of cases is important. No patient is suitable for treatment with tuberculin who presents symptoms of acute inflammatory changes in the tuberculous areas or of septic infection. The treatment should be carried out in a special institution, where alone control and oversight are possible. Physical examination of the chest must precede and follow the administration of every dose, and the result be recorded. The distinction between local and general reaction must be clearly understood. The latter is to be avoided. The dose should not be repeated for twenty-four hours after the effects of the previous dose have subsided.

The initial dose may be $\frac{1}{10}$ milligram, and may be gradually increased by tenths of a milligram up to 1 milligram. Then the increase is by fifths up to 2 milligrams; then by halves up to 10; by doses of 2½ up to 20; and thereafter by doses of 5 milligrams at a time. When a point is reached where the improvement is radical the remedy is withdrawn for from two weeks to a month. If there is no relapse the patient is simply kept under observation, but if there is a relapse a repetition of the treatment is necessary.

Tuberculin must not be considered a cure-all, or as a remedy indicated under all conditions of the disease, but as of great value when used properly. Its effects are as uniform as could be expected under the great variety of individual conditions present, such as constitution, stage of the disease, organs involved, and complications.

DR. I. H. HANCE, of Saranac Lake, N. Y., read a paper entitled "A Clinical Study of Crude Tuberculin and Modifications of the Lymph in the Adirondack Cottage Sanitarium." He reported twelve cases treated with Trudeau's modification of tuberculin. In all, the sputum contained tubercle-bacilli. In four of the cases the process was incipient; in five, advanced; and in three, far advanced. Three of the incipient cases were cured and no relapse has occurred, now after eighteen months. One has returned to the Sanitarium, but the process is confined to one lung and has assumed a more limited character than usual.

Of the advanced cases one is well (discharged eight months ago), as are three other cases discharged at later periods; the fifth has been lost sight of.

Of the far-advanced cases two were hopeless and are dead, and the third left the Sanitarium with the disease quiescent, but was suffering from gastric catarrh. Since, she has developed diarrhea and is probably dead. In all of these far-advanced cases throat-lesions were most pronounced.

It is the aim to administer the lymph so that it will not produce any reaction, as any systemic disturbance is productive of injury. Beginning with small doses, given sometimes twice a day, until tolerance has been established (which may be a matter of some weeks), it has been found that patients with very far-advanced lesions bear the lymph well.

The initial dose is from 0.001 to 0.005, and is repeated daily unless the patient reacts, as evidenced by a rise of temperature to over 100° F. in apyretic cases or above the daily average temperature in febrile cases, or by marked systemic disturbance. In any of these events the injections are omitted for a day or two, and the dose is more slowly and cautiously increased by from 0.002 to 0.005 at a time until 0.025 or 0.050 are administered. When this dose has been administered without any reaction for a couple of weeks tolerance has been established, and the injections can be given in more rapidly increasing doses. The largest dose ever administered daily without reaction was 1.8 c.c. When the lymph has been omitted for some time, subsequent treatment shows that the system is more tolerant than upon first treatment.

DR. A. H. SMITH, of New York, read a paper on "Respiratory Mechanism of Wounds in the Chest." He exhibited a mechanical device for illustrating the movements of the lung in penetrating wounds of the chest. It consisted of two bellows, operated by handles common to both, and representing the thoracic cavities, each containing an elastic bag, representing the lung. The top of each bellows was of glass. A slot, covered by a slide, represented a wound of variable dimensions, tubes representing the bronchi and trachea connecting the two bags.

With the slot wide open, and the bag on that side disconnected from its fellow, it was seen that the movements of the bellows were without effect on the bag; but when the connection was reëstablished, it was evident that the bag received air from its bellows when the handle was depressed and that it collapsed when the handle was lifted, its movements being exactly the reverse of those of the bag on the other side. When the device representing the glottis was partly closed, this reverse movement was very marked. Dr. Smith observed that this action exactly resembled that seen in an animal when the thorax on one side is freely opened. On progressively lessening the size of the opening this reverse action becomes constantly less, until a point is reached where the lung (bag) remains at rest in a state of partial inflation. With a still smaller opening, the lung begins to follow the movements of the chest and becomes independent of the action of its fellow.

Dr. Smith exhibited a valvular drainage-tube for cases of operation for empyema. The valve consists simply

of an India-rubber nipple with a slit in the top; this nipple is secured to the outer extremity of the ordinary tube and forms a complete valve.

THIRD DAY—MAY 27TH.

DR. A. N. BELL, of Brooklyn, read a paper on "The Climate and Mineral Springs of North Carolina." He divided the State physically into three sections: (1) the coast and swamp land, extending from fifty to eighty miles inland, the most insalubrious; (2) the middle section, extending from the termination of the former, beginning at an altitude of about 400 feet, and extending to the foot of the mountains, where the third section begins, at an altitude of 1000 or 1500 feet, and embracing the western part of the State—the mountainous region.

The middle section is a broad undulating plain, for the most part covered with pine. The lowest points in the Black Mountains are nearly as elevated as Mount Washington, while Mount Mitchell is 400 feet higher. The table-land between the ridges is a series of well-watered, forest-covered, fruitful valleys and hills, from 2000 to 3000 feet above the level of the sea, and one of the most picturesque and salubrious sections of the United States.

The mean temperature of the middle section is about that of the spring and autumn months, 58°; in the summer it is 78°; in winter, 40°. The average annual rainfall is about 44 inches. The annual mean humidity, 65; spring, 59; summer, 66; autumn, 68; winter, 69.

The pine forest section is of exceptional healthfulness throughout the year; the mountainous section is from ten to fifteen degrees colder than the middle section, but less humid and more bracing.

The mean annual temperature of Asheville is 54.20°; the temperature rarely rising above 84° on the hottest days; the average annual rainfall being 34.21. The winter climate is remarkable for its dryness and equability. In the higher altitudes the temperature is more variable.

Mineral springs abound: Acidulated waters, calcareous waters, chalybeate waters, saline waters, hot and warm springs. These are found in the Glen Alpine Spring; Charlotte Mineral Spring; Iron Spring, in Madison County; Chatham Mineral Spring; and on the western branch of the French Broad River, in Buncombe County.

There are many others that have not been analyzed in Vance County, Murfreesborough County, and in the counties of Stanley, Stokes, Wayne, Caswell, Gaston, Beaufort, and Moore. Sulphuretted waters are found at Chapel Hill, Orange County, and in the counties of Burke, Warren, Montgomery, Caldwell, and Catawba.

DR. DARLINGTON expressed his belief that the matter of climate does not have a great deal to do with disease—certainly not with pulmonary tuberculosis. Oregon, with its great rainfall, is far healthier than the drier sections, such as California, New Mexico, and Arizona, where there is very much less rainfall. One can find as many rosy cheeks in London, where there is no sunshine, as on the Western plains, where the sun shines every day. Persons who go great distances from home for their health are often exposed to many annoyances, anxieties, and discomforts.

DR. EDWARD O. OTIS, of Boston, read a paper entitled "Measurements of the Chest and Lung Capacity." A comparison of these averages with those of other examiners shows but little difference.

DR. J. R. TAYLOR, of Sag Harbor, N. Y., read a paper entitled "The Filaria Sanguinis Hominis, and Carcinoma of the Heart and Lungs Secondary to Carcinoma of the Liver."

DR. A. L. LOOMIS, of New York, read a paper on "Cardiac Dyspnea." He spoke of the different varieties of dyspnea, and restricted the term cardiac dyspnea to such changes in the heart as interfere with the passage of blood to the lungs. In this condition there are no changes in the lungs, bronchial tubes, or larynx to obstruct the entrance of air into the alveoli. It is because the condition is more commonly the result of obscure changes in the cardiac walls rather than of valvular lesions that its importance is to be emphasized.

Two cases were related in which death had occurred during the dyspneic attacks. In one dilatation of the right heart, with fatty degeneration of its walls, was found, in consequence of which large masses of fibrin formed in the auriculo-venticular opening, obstructing the passage of blood. In the other case the heart-cavities were found distended with blood, showing that the heart had stopped in diastole. Both coronary arteries were completely obstructed. In one of the arteries the obstruction had evidently existed a long time, but though the caliber of the other was diminished for an inch or more, it had been pervious until a short time before death, as evidenced by a recent thrombus. On microscopic examination the cardiac walls were found to have undergone fibroid changes.

Dr. Loomis considered the different pathologic conditions that would give rise to cardiac dyspnea, and the causes of death.

It seems reasonable to suppose that in all cases the predisposing cause of true cardiac dyspnea is a gradual failure in the contractile power of the heart, and that the exciting cause is an arrest of the cardiac circulation.

A fully developed attack usually comes on with a sense of constriction across the chest, which is immediately followed by a gasping for breath; the surface of the body becomes pale and cold; the countenance extremely anxious, and if the attack is not too severe, the patient is constantly changing his position with the hope of obtaining relief. The mind remains clear; the pulse is feeble, irregular, and intermittent, and frequently there will be a prolonged absence of the radial pulse.

The following were elected officers for the ensuing year: President, Dr. Andrew H. Smith, New York; Vice-Presidents, Dr. E. L. Trudeau, Saranac Lake, N. Y., and Dr. I. H. Platt, Lakewood, N. J.; Secretary and Treasurer, Dr. J. B. Walker, Philadelphia; Council, Dr. E. L. Shurley, Detroit; Dr. A. L. Loomis, New York; Dr. F. I. Knight, Boston; Dr. R. G. Curtin, Philadelphia; and Dr. W. E. Ford, Utica, N. Y.

Cremation at Tokio.—The intelligence and progressiveness of the Japanese are proverbial. That they are in advance in matters sanitary is indicated by the fact that during the year 1892 the number of bodies cremated at Tokio, among a population of about a million, was 16,494.

ASSOCIATION OF AMERICAN PHYSICIANS.

Eighth Annual Meeting, held at Washington, May 30, 31, and June 1, 1893.

FIRST DAY—MAY 30TH.

DR. ALFRED L. LOOMIS delivered the President's Address. He urged the importance of substituting science for mere empiricism in medicine. Scientific skepticism is, perhaps, the most striking characteristic of medicine to-day. The laws of health and disease are now studied in the kindergarten of the laboratory. Extensive speculative theories are rendered almost impossible by the sharp criticism to which every theory is subjected. Every man of science should set himself the task of putting forth only what is true. The final test of a scientific mind is the ability to decide between demonstrated facts and imperfect inferences. The laboratory must be looked to to answer many unsolved problems.

The President, in conclusion, referred feelingly to the deaths of Dr. Geddings and Dr. George Ross.

The thanks of the Association were voted to the Surgeon-General of the Army, for permission to use the Army Medical Museum for the meeting.

Dr. William Pepper resigned as the representative of the Association before the Congress of Physicians and Surgeons.

Dr. George Dock, of Ann Arbor, and Dr. T. F. Rotch, of Boston, were elected members of the Association.

An amendment to the By-laws was passed, allowing the Council to determine the annual dues, instead of having the dues fifteen dollars every year, as at present.

Dr. Minor was, by vote of the Association, transferred from the active to the honorary list of members.

The Treasurer's report showed a balance of $2076.76.

DR. BEVERLEY ROBINSON, of New York, read a paper on "The Course and Treatment of Certain Uremic Symptoms." The term renal insufficiency is preferred to that of uremia, because the renal origin of the symptoms is not always clear. Illustrative cases were reported. In one there were marked nasal symptoms, with intestinal disturbances, and at times a heavy deposit of urates, but without albumin in the urine. In another case there were laryngeal symptoms, with despondency and irritability, without dyspeptic symptoms. In an other there were nausea and vomiting, with cardiac symptoms.

Dr. Robinson expressed the belief that many nasal, laryngeal, and pharyngeal symptoms are due to impurity of the blood from renal insufficiency. Symptoms similar to those in the cases reported are sometimes connected with organic renal changes.

In treatment, the condition of the kidneys must never be overlooked. In the evident gouty cases, colchicin is much better than nitro-glycerin. So-called increased arterial tension is often due to atheroma, and increased heart-power, through the use of digitalis and caffeine, is needed. But whenever the symptoms indicate renal insufficiency, digitalis must be used with caution. Warburg's tincture was of distinct service in one case—possibly because there had been a malarial infection, or because the remedy may act as an hepatic stimulant. Opium is dangerous in these cases; it does good when the renal insufficiency is secondary to a weakened and dilated heart. It is not to be used when the pupils are contracted. Nevertheless, hypodermatic injections of morphine have been of great service in uremic convulsions when the symptoms were due to spasm of the renal vessels.

The primary source of uremic symptoms is in the intestinal tract, not in the kidney. Bismuth salicylate and beta-naphthol are of great service, as are inhalations of oxygen and a warm climate.

DR. TYSON coincided with the view that opium is extremely dangerous in renal disease, particularly in chronic interstitial nephritis. In puerperal convulsions, when the kidney is in a condition of parenchymatous inflammation, morphine is of service.

DR. ATKINSON, of Baltimore, spoke of the value of opium in the treatment of both uremic convulsions and the sudden edema of the lungs that occurs in interstitial nephritis.

DR. LOOMIS advises morphine in the *acute* uremia of parenchymatous nephritis. In chronic uremia the drug may do great harm, except when it so strengthens the heart that it aids the emunctories.

DR. A. H. SMITH presented a paper on "The Reaction of the Urine with Ether." When normal urine is thoroughly shaken with ether, there is usually separated a gelatinous, opalescent substance. In perhaps one-fifth of the cases the ether will not mix with the urine. If a few drops of an acid be added, the reaction will occur in most, but not in all cases. The urine may, in the first place, be acid or not.

The substance thus obtained responds to the tests for protein. It is obtained after all mucus has been removed from the urine. It may, therefore, be considered an albuminoid substance. As it is most abundant in the urine of those having a vigorous appetite and a good digestion, while scanty or absent when the patient is on a restricted diet or has a feeble digestion, the inference is, therefore, that it represents an excess of nutritive proteids taken into the blood and thrown out by the kidneys. Chloroform produces the same reaction as ether.

It is possible that some of the cases in which anuria follows prolonged etherization may be explained by the formation of this gelatinous substance in the tubules of the kidneys, thus mechanically obstructing the excretion of the urine.

The paper of DR. C. W. PURDY, on "Detection and Significance of Proteids in the Urine," was read by title.

DR. C. S. BOND, of Richmond, Ind., read a paper entitled "Probable Origin and Early Symptoms of Certain Chronic Diseases of the Kidneys." He considered it probable that some of the early cardiac symptoms are due to spasm of the arteries. The tissue-changes are general, but some individuals show the effects more than others. The primary cause of the renal condition must be something that acts upon the body as a whole. Certain diseases, such as gout and rheumatism, and certain conditions, such as septicemia, are recognized as interchangeable causes in certain cases. The presence of uric acid in the blood is at times a potent factor. The cause of the excess of uric acid is to be found in faulty gastro-intestinal digestion; there thus result toxic matters that interfere with normal metabolism and lead to cell-destruction.

DR. WHITTAKER objected to the assumption that the symptoms mentioned necessarily preceded the develop-

ment of nephritis. They are met with in toxemias from any cause, *e. g.*, enteric fever.

DR. W. GILMAN THOMPSON, of New York, read a paper entitled "A Study of Addison's Disease and of the Adrenals," based upon the reports of 750 cases, in most of which there were autopsies.

The most common symptoms were gastric derangement, great muscular weakness, bronzing of the skin, diarrhea, and great feebleness of the heart and circulation.

In one personal case there was no lesion of the adrenals, and this is true of a number of cases observed by others. Moreover, adrenal lesions were noted in 112 cases in the absence of symptoms of Addison's disease.

There is probably disturbance of the abdominal sympathetic system, in particular the celiac axis. There is some experimental evidence in support of this view.

Experiments upon animals have proved negative as to any effect of removal or transplantation of the adrenal. There are, however, distinct degenerative changes in the sympathetic system in Addison's disease.

In only 81 cases has the sympathetic system been examined. In 27 of the last 30 cases lesions were found. Actual disease, however, is not necessary; functional disturbance of the abdominal sympathetic system may be sufficient.

DR. WELCH stated that he has met with six cases of Addison's disease in which there was the characteristic tuberculous lesion of the adrenals. In one there was tuberculous disease of the vertebræ. In a negro pigmentation was discovered in the mouth.

DR. WHITTAKER suggested that perhaps some of the cases supposed to be Addison's disease, but not found to be associated with adrenal lesion, may be cachexias of various kinds.

DR. JAMES TYSON presented a paper entitled "Two Cases of Cystin Calculus." In one case he has never failed, in the past two years, to find cystin in the urinary sediment.

In the second case, the patient's urine for thirty-seven years contained cystin. The man died from the exhaustion of repeated attacks of renal colic. The conditions, therefore, seem to be life-long. The urine should be kept alkaline, as by this means the amount of cystin is much reduced.

DR. G. BAUMGARTEN, of St. Louis, read a paper on "A Simple Continued Fever." He related that in St. Louis and vicinity during the past fifteen years there has been encountered a fever lasting from two and a half to four or five weeks; affecting persons under thirty years of age; marked by high temperature, even hyperpyrexia; sudden onset, rather than a gradual accession; a temperature-curve of greater irregularity than in a typical case of enteric fever; a total absence of local symptoms or signs of localization; the presence of such general symptoms only as may be ascribed to the high temperature, and sometimes terminating by crisis. It is not mild, abortive, or ambulatory enteric fever. The pulse-rate falls before the temperature. Only a minority of the cases present muscular and articular pains. Mental hebetude is absolutely wanting. Delirium is common. The mind is bright. Subsultus tendinum, muttering delirium, and involuntary discharges of urine and feces are absolutely wanting. Digestive symptoms are not well marked. Diarrhea is rare, and the stools are never like those of enteric fever. Post-mortem evidence is wanting, for there were no fatal cases. The spleen is not enlarged. Sometimes at the height of the fever there was a hacking cough. There are no rose spots. Emaciation is usually marked, but not so decided as in enteric fever. True relapses on the fourth or seventh day of apyrexia are rather more common than in enteric fever. The plasmodium of malaria could not be found in the blood.

For the want of a better name the condition may be called *febris continua simplex*.

DR. J. T. WHITTAKER, of Cincinnati, read a paper on "Creasote in the Treatment of Tuberculosis." He pointed out that the virtue of creasote depends upon its purity. The impure contains carbolic acid. Creasote has no influence on the fever; not enough can be given to have any direct effect upon the tubercle-bacillus.

Tuberculosis in man is not a simple process, differing in this respect from tuberculosis of the laboratory. The sputum contains also various cocci, which give rise to secondary complications, leading to septicemia and a fatal termination. Creasote favorably influences these complications by promoting nutrition, but is in no sense a specific for tuberculosis.

Creasote may be given internally, subcutaneously, and by inhalation. It should be given in the largest dose that will be tolerated. The use of tuberculin may be conjoined with that of creasote.

DR. F. FORCHHEIMER read a paper on "The Intestinal Origin of Chlorosis." He stated that chlorosis is due to an oligochromemia. The diminution of hemoglobin may result from increased destruction or lessened formation. There is no appreciable destruction of hemoglobin, as determined by the absence of urobilin from the urine. Chlorosis is the result of faulty hemopoiesis. Hemoglobin is principally formed in the intestine, as has been demonstrated by direct investigation upon lower animals, and by indirect observation upon the human being. The red corpuscles in the veins contain more hemoglobin than those in the arteries. Further, the formation of hemoglobin can be increased by the introduction into the intestine of agents not containing iron, but preventing putrefaction.

A large amount of hemoglobin (about 3 per cent.) is added to the blood after the principal meal.

Dr. Forchheimer has investigated a toxic body, a proteose, that was obtained from the urine of cases of chlorosis. In 11 cases treated with salol and hydronaphthol, and without iron a gain of from 5 to 12 per cent. of hemoglobin was noted. Hydronaphthol rather proved the better remedy. The conclusion is reached that chlorosis is due to some interference with the formation of hemoglobin as a result of a destructive action in the intestine upon the precursor of hemoglobin.

Dr. Forchheimer holds that there is always an anemia as well as an oligochromemia. He is experimenting with the substance isolated from the urine.

DR. H. C. WOOD read a paper on "Experimental Observations Concerning the Nature of Chorea."

Having observed that quinine stimulates inhibition, and thinking that perhaps the movements of chorea were dependent upon diminished inhibitory power, he injected small doses of quinine into a choreic dog, and the movements were arrested. Under atropine the

choreic movements were increased, and even exaggerated. In chorea the reflexes may appear to be wanting, but they can be elicited by reinforcement. It does not follow, however, because quinine stimulates inhibition that it will cure chorea.

Clinical experiments upon dogs with chorea support the views announced. In several cases in human beings, distinct improvement, and in some apparent cure, followed the use of quinine (gr. xij–xxiv a day). Of nine cases treated by Dr. Potts, quinine failed in only two. The average duration of treatment was eleven days. There was no appearance of cinchonism in any of the cases.

DR. WHITTAKER pointed out that the experiments were defective in that there was no record of blood-examination. Many cases are of toxic origin; some are malarial.

DR. WELCH said that in chorea in the dog there is a peculiar protozoic organism present in the intestine, but no malarial germ in the blood.

DR. OSLER said that chorea in the dog and chorea in the child are not identical, either in the character of the movements or in the pathologic anatomy. Chorea in the dog is not followed by endocarditis. Quinine is probably not a better medicament than arsenic in the treatment.

DR. WOOD maintained that chorea is a condition and not a disease, which may be produced by many causes. There is reason to think that possibly the underlying factor is a weakening of inhibition. The chorea of the dog and the chorea of the child may or may not be the same, but they have at least many things in common.

(To be continued.)

AMERICAN SURGICAL ASSOCIATION.

Fourteenth Annual Meeting, Buffalo, N. Y., May 30, 31, and June 1, 1893.

FIRST DAY—MAY 30TH.

DR. M. D. MANN, of Buffalo, delivered an Address of Welcome.

DR. N. SENN, of Chicago, delivered the President's Address, taking for his subject "A New Method of Direct Fixation of Fragments in Compound and Ununited Fractures." He formulated the following conclusions:

1. Direct fixation of the fragments is indicated in all compound fractures in which perfect retention cannot be secured by simpler measures, and in the treatment of ununited fractures requiring operative interference.

2. This method is also justifiable in the treatment of certain forms of subcutaneous fracture in which reduction and retention cannot be accomplished without it.

3. Free exposure of the fragments in compound fractures secures the most favorable condition for thorough disinfection.

4. Perfect reduction and direct fixation of the fragments are the most reliable prophylactic measures against delayed union, non-union, and deformity.

5. A compound fracture should be regarded in the same light as an injury of soft tissues, and should be treated upon the same principles, viz., accurate coaptation of the different anatomic structures and perfect retention by direct means of fixation, aided by an efficient external support.

6. Bone-suture, metallic, bone, and ivory nails do not furnish the necessary degree of support and immobilization in the direct treatment of fracture characterized by a strong tendency to displacement.

7. The solid intra-osseous splint of ivory or bone, as advised by Heine, Langenbeck, and Bircher, is objectionable, because it interferes with the ideal production of the intermediate callus and its spontaneous removal is beyond the absorptive capacity of the tissue.

8. The hollow, perforated ivory or bone cylinder, devised by the author, answers the same mechanical purpose, without the objections that have been charged against the solid cylinder.

9. The safest and most efficient means of direct fixation of oblique fractures is by a bone ferrule that must be applied in such a manner as to surround both fragments.

10. Such a circular, absorbable, direct splint prevents to perfection lateral and longitudinal displacement.

11. Rotation of the limb below and angularity at the seat of fracture must be prevented by a carefully applied circular plaster-of-Paris splint.

12. For fractures not requiring drainage the entire wound should be closed by buried and superficial sutures, as the bone ferrule is removed by absorption.

13. In suppurating wounds the bone ferrule should not be removed until direct fixation has become superfluous by the formation of a sufficiently firm union between the fragments.

14. The external splint should be applied in such a manner that it does not require a change throughout the entire treatment, permitting, at the same time, access to the wound, should this become necessary.

15. Direct fixation of a fracture, combined with perfect immobilization, brings the different anatomic structures of the broken bone permanently into their former normal relations, preparing the way for the early initiation and speedy consummation of an ideal process of repair and the realization of a perfect functional result.

16. Should further experience demonstrate that bone is not sufficiently absorbable, the same kind of ferrules can be made of partially decalcified bone or chromicized catgut.

(To be continued.)

CORRESPONDENCE.

FRACTURE OF THE FEMUR DURING DELIVERY; REPORT OF A CASE.

To the Editor of THE MEDICAL NEWS,

SIR: In THE MEDICAL NEWS of March 25, 1893, Dr. Hubbard reports a case of femur fractured during delivery. Another case is also reported in your issue of May 13, 1893, by Dr. Gruwell.

This is, indeed, an accident of rare occurrence, and when it does occur the physician is likely to be censured by the parents and friends. In the last eight years I have witnessed and attended over five hundred cases of labor, both in this country and in Germany, and have only seen the accident once, the case occurring in my private practice. In February, 1891, I was called to see

Mrs. B., a primipara, who had been in labor four and a half hours. The membranes had been ruptured an hour before my arrival; the left leg of the fetus was protruding from the vagina, with the nates presenting at the vulva; the cord was pulsating. I grasped the protruding foot and made slight traction; a very severe pain followed, with apparently no advancement of the child. I then introduced my forefinger and found the right leg applied to the back of the left thigh, and directly across the pelvis of the mother. Hesitating a moment to consider the best method of relief, another hard pain came on; I hastily withdrew my finger and the child was expelled, leaving the perineum intact. A sharp click was distinctly heard by the three persons present. The child was somewhat asphyxiated, and as I caught hold of its feet to hold it up I felt the sensation of a broken bone, and the little one (a girl) began to cry lustily. On examination, I found the right femur broken in the middle third; crepitation was distinctly recognized, and, while the child moved the left leg, the right one was kept absolutely quiet. I had the infant thoroughly washed, set the broken bone, smoothly wrapped the leg in a thin layer of absorbent cotton, cut a piece of pasteboard in the form of a circular splint, and after wetting it thoroughly in very hot water, starched it, and applied it over the cotton, letting it extend from the hip to midway between the knee and the ankle. It was placed smoothly over the cotton, encircling the whole leg, and held in place by six pieces of adhesive plaster; over this a bandage was neatly applied, then a padded lath which extended from axilla to ankle, and bound in place by an inner and an outer bandage. The outer one was changed about every second day, or whenever it became soiled. The little one thrived, and in four weeks I released it and found a perfect limb, with quite a large amount of callus at the point of fracture; in six months this had disappeared. The infant walked as early as any child, and there was no shortening.

Very respectfully yours,

CHARLES F. DAVIDSON, M.D.

QUEENSTOWN, MD.

CONSERVATIVE SURGERY IN APPENDICITIS.

To the Editor of THE MEDICAL NEWS,

SIR: In your issue of May 13th there appeared an article on "Appendicitis," by Dr. Reuben Peterson, who records a unique case appearing after confinement.

His description may satisfy physicians who yet call pneumonia inflammation of the lungs, or lung-fever; meningitis, brain-fever; and treat such diseases as "inflammation of the bowels, idiopathic peritonitis, typhlitis, perityphlitis," etc. But let Dr. Peterson himself be taken, as I was on the 6th of May, with a severe attack of acute appendicitis, call in a physician well up on the subject, who advised sending for a surgeon who is our ideal in this part of New York; and then, with a nice little home, wife and daughter; with a fair practice—everything to live for—what would he think of them sitting by his bedside and telling him that 50 per cent. of the cases get well with a good "let-alone" treatment?" Would he be satisfied? I trust not.

I know too well the results of surgical work in this direction. One surgeon, Dr. R. T. Morris, of New York, who comes here, has never lost a case when he has been called in time; and he believes that the mortality should not be over 1 per cent. if cases are taken in hand before septicemia or suppuration has set in. His usual incision in uncomplicated cases is one and one-half inches.

A single man or woman may enjoy the luxury of delay, but a man with a family is morally bound to have his appendix vermiformis removed as soon as a diagnosis of appendicitis is made.

Cases that are not operated upon often become chronic invalids—in consequence of the presence of adhesions or of recurrent attacks.

To-day I am practically a well man, devoid of a vermix (Wilder)—thanks to advanced surgery.

Every man, woman, and physician can look back and recall some friend who has died of this frightful disease.

Please allow this space, and oblige a thorough *believer in early operations*.

JOHN S. KIRKENDALL, M.D.

ITHACA, N. Y,

ANGINA PECTORIS.

To the Editor of THE MEDICAL NEWS,

SIR: At the recent meeting of the Climatological Association I took occasion to make some remarks upon angina pectoris, the subject having been introduced by Dr. Curtin, the President of the Association. I endeavored to emphasize the distinction between genuine angina pectoris (Heberden's disease) and pseudo-angina, or "angina pectoris vasomotoria," for, as it seemed to me, the line of demarcation between these widely different affections had not been sharply drawn. I spoke of the rarity of genuine angina, mentioned in proof thereof the small number of cases that I had seen during a twenty years' service in large Philadelphia hospitals, and referred, from memory, to a similar statement in Eichhorst's *Specielle Pathologie*. On consulting this work I find that the statement to which, at the meeting of the Association, I could only refer in general terms is that Gilbert Blane, during ten years at St. Thomas's Hospital, treated 3835 patients, not one of whom suffered from angina.[1]

In reply to my remarks, it was objected that angina pectoris is much more common in private than in hospital practice, a statement which confirms my opinion that the distinction between genuine and spurious angina was not carefully maintained.

Genuine angina pectoris is a symptom of organic disease of the heart and neighboring vessels, its most common association being with atheroma of the aorta and coronary arteries, and until it is proved that this form of degeneration is more common in the well-to-do classes—that is, in the well-nourished and temperate—than in ill-nourished inebriates, the statement that angina is more common in private than in hospital practice rests upon nothing more than a mere *ipse dixit*.

It would be hard to convince a physician connected with the Philadelphia Hospital, in which nearly every patient past middle age presents signs of sclerotic or

[1] "Gilbert Blane, beispielsweise, welcher innerhalb von zehn Jahren im Thomasspital 3835 Personen behandelte, begegnete ihr nicht ein einziges mal."

atheromatous arteries, that the bloodvessels of comparatively temperate men and women are in a still worse condition. Yours truly,

FREDERICK P. HENRY.

1635 LOCUST STREET, PHILADELPHIA.

DR. FREIRE'S YELLOW-FEVER INOCULATIONS.

To the Editor of THE MEDICAL NEWS,

SIR: I regret that I am obliged to occupy your space and my time in correcting a misunderstanding by Dr. Gaston of the extract from my published report quoted in my letter in your issue of April 8th.

The quotation is as follows:

"It is a significant fact that, of the 3051 vaccinated prior to August, 1885, Dr. Freire has only 1 fatal case to report, while out of 460 vaccinated in January and Febuary, 1886, he reports 5 deaths, a mortality of more than 1 per cent., which he gives as the general mortality among those [the non-] vaccinated. That is to say, the mortality among those vaccinated during these two epidemic months was more than 1 per cent. On referring to the mortality of the city for the same two months, he remarks: 'I find the total number of deaths to have been 369, which, in a total susceptible population of 160,000 (Dr. Freire's estimate), would give a mortality of 1 in 436.'"

Dr. Gaston comments on this as follows:

"This is the climax of Dr. Sternberg's array of figures against the statistics of Freire: that more of his inoculated cases died in a given period than the proportion of deaths from all causes amongst the population of the entire city, including, of course, in the general result, those identical cases laid at the door of Domingos Freire."

I am not so stupid as to compare the "deaths from all causes amongst the population of the entire city," with the deaths among those vaccinated by Freire. My report relates to yellow fever mortality, and the 5 deaths among 460 vaccinated in January and February, 1886, were deaths from yellow fever. The 369 deaths which occurred in a total susceptible population of 160,000 were deaths from yellow fever; and 160,000 is not the "population of the entire city," which exceeds 400,000, but is the estimate made by Freire himself of the susceptible population of Rio.

Very truly yours,

GEORGE M. STERNBERG.

NEW YORK, May 8, 1893.

NEWS ITEMS.

Dr. S. Baruch has withdrawn from the *Dietetic Gazette* to assume editorial charge of the *Journal of Balneology*.

Morphinomania in Paris.—The startling estimate is given out that there are from 40,000 to 100,000 morphinomaniacs in Paris.

Colonel George M. Sternberg, M.D., U.S.A., has been appointed Surgeon-General of the United States Army, vice Sunderland, retired.

The Eighth International Congress of Hygiene and Demography will be held at Buda-Pesth in 1894. The work will be divided among thirteen sections, as follows: 1. Bacteriology. 2. Preventive Medicine. 3. Hygiene of Occupations. 4. Hygiene of Childhood; School Hygiene. 5. Hygiene of Food-supply. 6. Hygiene of Building. 7. Hygiene of Cities. 8. Railway and Ship Hygiene. 9. Military Hygiene. 10. Hygiene of Mineral Springs and Baths. 11. State Hygiene. 12. Veterinary Hygiene. 13. Hygiene in Pharmacy.

The International Medical Congress.—It is officially announced that the rumors are entirely unfounded that the International Medical Congress to be held at Rome in September is to be postponed on account of the engagement with cholera matters of distinguished participants. The Fifteenth Section of the Congress will be devoted to a consideration of cholera and quarantine. Prof. Koch and Prof. Cunningham are expected to take part in the discussion. In addition to the North German Lloyd Steamship Company, the Hamburg-American Packet Company, and the Compagnie Générale Transatlantique, the Netherland Steam Navigation Company offers reduced rates of transportation to visitors to the Congress. The Hamburg-American Packet Company announces that the concession also applies to the families of members.

BOOKS AND PAMPHLETS RECEIVED.

A System of Genito-urinary Syphilology and Dermatology. By Various Authors. Edited by Prince A. Morrow, A.M., M.D. In three volumes. Vol. I, Genito-urinary Diseases. New York: D. Appleton & Co., 1893.

Psychopathia Sexualis, with Especial Reference to Contrary Sexual Instinct: A Medico-Legal Study. By Dr. R. von Krafft-Ebing. Authorized translation of the seventh enlarged and revised German edition, by Charles Gilbert Chaddock, M.D. Philadelphia and London: The F. A. Davis Co., 1893.

History of the Life of D. Hayes Agnew, M.D., LL.D. By J. Howe Adams, M.D. Philadelphia and London: The F. A. Davis Co., 1892.

Ripening of Immature Cataracts by Direct Trituration. By Boerne Bettman, M.D. Reprinted from Annals of Ophthalmology and Otology, 1893.

Students' Expenses. A Collection of Letters from Undergraduates, Graduates, and Professional School Students, Describing in Detail their Necessary Expenses at Harvard University; with an Introduction by Frank Bolles, Secretary of Harvard University. Cambridge: Published by Harvard University, 1893.

The Third Year's Work at the Clinic for Diseases of the Rectum in the New York Post-Graduate Hospital. By Charles B. Kelsey, M.D. Reprinted from the New York Medical Journal, 1893.

Report of a Case of Syringomyelia, with Exhibition of Sections of the Spinal Cord. By James Hendrie Lloyd, A.M., M.D. Reprinted from the University Medical Magazine, 1893.

Diseases of the Skin. By P. H. Pye-Smith, M.D., F.R.S. Philadelphia: Lea Brothers & Co., 1893

Elementary Physiology for Students. By Alfred T. Schofield, M.D. Philadelphia: Lea Brothers & Co., 1892.

Investigations into the Nature, Causation, and Prevention of Texas or Southern Cattle Fever. Made under the Direction of Dr. D. E. Salmon, Chief of the Bureau of Animal Industry. By Theobald Smith, Ph.B., M.D., and F. L. Kilborne, B.Agr., B.V.S. Published by authority of the Secretary of Agriculture. Washington: Government Printing Office, 1893.

Tumor of the Hard Palate; Acute Appendicitis; Perinephritic Abscess. By W. W. Keen, M.D, LL.D. Reprinted from International Clinics, vol. iv, 2d series.

Original Investigations in Cattle Diseases in Nebraska. Southern Cattle Plague. Third edition. By Frank S. Billings. Lincoln, Neb.: State Journal Co., Printers, 1893.

THE MEDICAL NEWS.

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ORIGINAL ADDRESS.

THE ADDRESS[1] OF THE PRESIDENT OF THE AMERICAN MEDICAL ASSOCIATION.[2]

BY HUNTER McGUIRE, M.D.,
OF RICHMOND, VA.

THE members of the American Medical Association, representing 100,000 doctors, with all the intelligence, professional cultivation, trained skill and experience, and high personal character, which they should possess—dealing with matters affecting the mental and physical energies of this entire generation of Americans, and the next—cannot but contemplate with gravest concern the important duties, the weighty responsibilities, resting upon them.

As patriotic citizens, we owe it to our country, as well as to the Association we represent, earnestly to strive to evolve, through hard work, thorough observation, and knowledge of the needs and demands of all sections of the country, the things that are necessary, not only for the preservation of health, but also for the highest conditions of physical and mental development.

There is no organization in this country so well equipped as ours for the accomplishment of the work we have undertaken. We more thoroughly represent medical opinion than any other body of a kindred character, the delegates composing this association being drawn principally from other organized medical societies, coming not only from the larger but also from the smaller medical bodies; representing all sections of the country, from Maine to Texas, from California to Virginia. When all these are gathered together in our annual sessions our rolls may fairly be supposed to display the names of the most learned and distinguished of the medical men throughout the land.

Speaking in general, our prime object is to study the origin of disease; the immediate occasion of its outbreak, with the means of preventing it, and the best means of loosening its malignant hold, if once fastened upon the community or the individual. Secondarily, and yet with a due appreciation not only of its value, but of its necessity as a means to the chief end, we labor to secure for this organization, and for all allied with it, the greatest possible efficiency in the performance of the practical work intrusted to us.

The laws of Nature, systematized and arranged upon lines that will meet all demands essential to the preservation and maintenance of the universe, when violated, are also sufficient for its destruction. Therefore we look to the material conditions surrounding us, coupled with the proneness of all animated nature to organic derangement and decay, for the real cause of death in the human family. While human life has been progressively prolonged during the past century, through a better appreciation and enforcement of hygienic requirements—by legal and police compulsion under the stronger governments, and in those of liberal form by an enlightened public opinion demanding special legislation in regard to such requirements—there remains much to be accomplished before even relative perfection can be reached. In the United States I believe we are on the threshold of great improvements in this direction. To secure them demands united action. It belongs to us of the medical profession, by systematic, thorough, and intelligent observation, to inform ourselves of the minutiæ essential to a thorough knowledge of the origin of the maladies common to the country, as well as those that are introduced from without. That being done, our united force must be brought to bear to secure and put in active operation such measures as will effectively stamp out the one group and exclude the other.

In order that every obstacle may be removed and every agency brought to bear that can contribute to success, the medical man must gird himself for a stern battle with ignorance and prejudice, with misdirected intelligence, and jealous conceptions of right. Our battle is first with the people, and then with their representatives. The average citizen supposes that there is some subtle and selfish design on the part of the physician, especially on the part of associated physicians, to deprive him of some portion of the personal privileges he now enjoys. The American believes that his house is his castle, and even as he worships his household gods, so does he worship Magna Charta, Habeas Corpus, Trial by Jury, and Representative Government. The mental state thus engendered is one of morbid sensitiveness, and develops a temper that blindly strikes at all comers, and not least venomously at the investigator who would inquire into the condition of the premises where disease originates. Inquiry must be pushed in spite of all obstacles. There is no longer a question as to the absolute necessity for properly policing our cities, towns, villages, and private houses. Healthful water-supply and drainage, the right location of water-closets and sinks, and their disinfection, with the ventilation of all inhabited buildings, are now admitted to be essential to the maintenance of a high standard of health in every community. No physician is fairly discharging his duty who fails to seek information on all these subjects, and to take advantage of the knowledge offered him; and he is criminally negligent if he fails to act upon these fundamental principles when the occasion arises.

Tact, discretion, and painstaking instruction are often essential to convince interested parties of the necessity for special legislation, in order to protect the health of the general public. Politicians are, as a rule, timid, apprehensive, and eminently conservative where innovations against custom and habit are involved or where popular objections are likely to be encountered. They can be made to move only through pressure brought to bear by a united public sentiment. It should

[1] In abstract. [2] Delivered at Milwaukee, June 6, 1893.

be our endeavor to educate the masses up to the requirements in this direction. This we can best do by showing them the dangers that daily and hourly surround them from such diseases as are endemic and those that are of an epidemic and contagious nature. Through the politicians, acted upon by and coöperating with an intelligent public sentiment, State and local Boards of Health must everywhere be established. Their care will be to put in action the great *principle of prevention*, now so much better understood. Taking advantage of the operations of Boards of Health in Germany, and especially in Great Britain, we have, without conjoint action, accomplished much in certain limited sections of the more densely populated parts of the United States in preventing the outbreak of disease, as well as in curtailing its spread, and absolutely eradicating certain affections that threatened to become widespread and devastating.

Much is to be learned in connection with the endemic diseases of the various sections of our country. The malarious diseases prevalent amongst us have been extensively studied. Their immediate origin has not been definitely determined; but the conditions of heat, moisture, and vegetable decomposition are well understood as most potent in their production. It is a law long since ascertained on the Continent of Europe, in Great Britain, and in America, that wherever the trend of the land admits of the drainage of collections of fresh or brackish water, these maladies can be brought under control—in fact, can be permanently driven from the country. Yet a complex problem remains for us, viz.: How to effect these salutary results in the basin of the Mississippi, with its sluggish streams and torpid bayous; with the marsh-lands of the seacoast in general, and the vast swamps in the interior. Whilst this is a problem to be solved in the main by sanitary engineers, yet the physicians of the country must come to their aid by contributing their knowledge upon the subject, and inciting the inhabitants of the States to activity, in order to provide, through legislation, the means for carrying out the measures that may be recommended.

Not only in that great valley, but in sections, States, and cities, more favorably located, a mighty need exists and a great work is to be done.

To recur to the membership and organization of this and its allied associations: We cannot too highly estimate the importance of attaining the greatest degree of excellence possible in the various independent organizations that are here represented. This can be more effectually obtained through the State and local societies that are in active and friendly relations with us. The members of these respective organizations should strive to enlarge their usefulness by bringing into them all reputable physicians who reside within their jurisdiction. This can best be done by demonstrating to outsiders, through the excellence of their work, the importance and practical use of becoming members of the State societies, and leading them to feel that to keep abreast of the times it is necessary to mingle, at least once a year, with the other progressive medical men in the State, for the purpose of interchanging views on current professional topics and discussing and determining such things as appertain to the protection of the health and the general welfare of their *clientèle*.

The State societies should strive to induce their members to form societies in every county of their respective States, in all cities, and in all townships or parts of counties where there are sufficient numbers of physicians to justify such organizations. In this way a local and general activity will be engendered, and the average standard of professional intelligence raised to a degree that must result in great good to the residents of each State, and through general discussions of all leading questions appertaining to the health and welfare of each and every locality, measures will be evolved and remedies discovered that will prove of untold advantage to the community at large.

As for the workings of this Association—its organization has improved with each year, and I trust and believe that this advancement will be continuous until we reach that degree of systematic arrangement that will enable us to accomplish the greatest amount of good attainable in the time allotted to its annual meetings. Improvement in details is necessary for the realization of this result, and I trust that some plan will be devised that will assign more of the special work to the various sections, leaving the society as a whole to take charge of matters requiring its general supervision and determination. This is a subject to which I desire to call your special attention and to emphasize it, for I am confident that a majority of you will agree that it is of paramount importance. As essential to this purpose I sincerely hope that you will adopt some plan by which will be checked the growing tendency to read or have read before this body lengthy papers that could be considered and dealt with in a much more effective manner by the separate sections.

One or two subjects need to be specially and separately considered.

Constitution and Code. The committee to which was referred the question of revision of the Constitution and By-laws of this Association will present an entirely new paper, containing many of the valuable features of the old one; leaving out some, however, that in my opinion it was very desirable to retain. I am glad that our rules require that this report shall lie over for a year before being acted upon. Ample time for the consideration of such an important subject will be secured in this way.

The same committee will ask that the subject of the Code of Ethics be allowed to remain over for another year. While my own convictions in regard to the Code are of a very positive kind, I feel that, as the subject cannot be considered until the report of the committee is received, good taste and good policy both require that I should not discuss it by introducing it in this address.

I have one suggestion to make: I think that a revision of our Code should be referred to the several State medical societies entitled to representation here, and that these societies should report their action at the annual meeting of the American Medical Association. This would give us a fair expression of the opinions of the representative societies from all parts of our country, and every reputable American practitioner of medicine would have an opportunity to vote on the subject. At present, if the annual meeting is held in the West, the East and South have a minority of votes; similarly, if it be held in the East, the West and North; and if held in the

South, the East and West are likely to be in number of votes unfairly represented. Equal representation in votes and views for all parts of our common country, free from the domination of States immediately adjacent to the place of our annual meeting, should be obtained in acting upon such an important subject as a revision of the Code of Ethics. It would be well for the State medical societies to obtain and include in the vote of each State all county and district medical societies entitled to representation here.

Let the medical department of the Army, Navy, and Marine-Hospital Service also have a vote in this matter.

The medical societies referred to constitute a very large majority of our members. The "Members by Invitation," the "Permanent Members," and "Members by Application" have, by our constitution, no vote.

Let a majority of States decide this question, and let us agree to abide by their decision.

Medical Examining Boards. A large number of States have appointed, and have in operation, "State Medical Examining and Licensing Boards," which have contributed greatly to the elevation of the standard of medical education in their respective States and in the country generally. In some instances, in consequence of the existence and action of these boards, colleges have raised their requirements for entrance, and especially for graduation, and now send out men better fitted in many ways for the practice of their profession. I feel confident that before many years have passed every State in the Union, for its own protection, will have its examining board. As far as it lies in our power we should foster and encourage these medical examiners, who have a difficult and often thankless task to perform. A conference of delegates from each State Board might result in a uniform State law, which is desirable. As it is, at this time some of the State laws regarding the boards are defective.

Secret and Poisonous Medicines. I think this Association owes to the people of this country an earnest effort to stop the sale of secret and poisonous medicines. Free trade in physic is permitted, as far as I can learn, only in this country, and any quack can advertise in the reading and other columns of our newspapers his so-called patent medicines. Many of these nostrums are known to be poisonous, and of course hurtful. All over Continental Europe grocers and druggists are forbidden to sell any pharmaceutic preparations or compounds. This right is restricted to the pharmacist or apothecary, and he is often subjected to rigorous inspection, to very rigid laws, and to heavy penalties for their violation.

If each State would require the vender of any secret remedy to subject his formula to a board appointed by the State for this purpose, said board having the power to grant or refuse a license to sell, this already great and growing evil would be materially lessened or stopped.

Smallpox, Typhoid Fever, etc. The police regulation of smallpox is a matter for the gravest consideration upon the part of the General Government and of the several States of the Union. Regulations, full, comprehensive, and complete, should be formulated for the prevention of its introduction from without, and its eradication wherever it appears in our land. Notwithstanding the organizations known as "Anti-Vaccination Societies," which so often send out all sorts of misrepresentations, and notwithstanding misstatements from other sources, from the time of Jenner's conclusive demonstration (in 1796) down to the present hour, vaccination has been growing in favor, and now the great majority of the educated classes have become convinced of its importance. Compulsory laws have been put in force in the larger number of European countries, and especially in the German Empire, where not only the army, but also the people at large, are compelled to submit to vaccination at stated intervals—once every third year being the rule for the army.

Our large and constantly augmenting population, the facilities for travel, and the disposition to use these facilities, render it imperative that we should endeavor to obtain, as far as possible, from the respective States composing our Union legislation of a uniform character upon this subject. Until this is done there will be a constantly impending danger of local, and even general, outbreaks of this universal scourge of the human family. Were it not for the municipal powers that have been granted to our leading cities, and exercised by them, this disease would be perpetually with us, and our vital statistics would groan under the burden of its polluting ravages.

A study of the causes and conditions that produce typhoid fever, the curse of the mountain and Piedmont regions, demands the utmost industry and closest observation on the part of physicians whenever this disease makes its appearence. The great majority of writers upon this and kindred topics unfortunately reside in cities where the true type of the disease is rarely to be found, and where they are too liable to seize upon conditions that they know to be conducive to disease in general, and assign them as the active factors. Sinks, privies, sewer gas, and polluted drinking-water are the specters that flit across the stage to deride and delude these investigators. I cannot refrain from expressing the hope that there will arise some eminent man, or more than one, in the rural regions, possessing the intuition that is akin to genius, who will be able to show with almost mathematic certainty the real circumstances and combinations upon which this malady depends. Be it germ, be it mite, or leukocyte, the result remains the same. Individual diseases with their causes are better segregated in the country, and more reliable observations ought to be possible. Jenner and Koch were country doctors.

The contagious diseases, mumps, measles, whooping cough, scarlet fever, and diphtheria, annually carry to the grave thousands of our people, chiefly from the youths and infants, those who are nearest and dearest to us and who appeal most strongly to our tenderest sympathy. These maladies are increasing in a different ratio to the advance in population, and while moderate treatment has done much to alleviate the sufferings of these unfortunate victims, mainly through hygienic measures, still the mortifying fact is patent that their genesis is wrapped in the same obscurity that it was two thousand years ago. The germ, the malignant little parasite, we may have discovered as the source of all these troubles; but why or whence this germ? That defies our knowledge.

Quarantine. One of the most important questions of the hour is that of quarantine. During the past year

the apprehensions of the country have been fully aroused upon this subject, and there is every disposition on the part of the people to have such laws enacted as will render us safe against the introduction of Asiatic cholera and typhus fever. The latter has entered one of our principal ports, and has infected a limited number of the population of the city of New York. Thanks to the efficiency of the Board of Health, it has been kept under relative control, and is now abating. The former, starting from its home in the East some two years ago, and following the track along which it has heretofore traveled, has not only reached the most frequented ports of western Europe, but has traversed the Atlantic, and during last summer sought admission to our shores. Through a number of fortuitous circumstances, rather than by the aid of any well-ordered quarantine, we have been spared the misery of an active invasion. The disease has retreated to the farther side of the ocean, and seems to be preparing, with renewed energy and increasing activity, for a second attempt to invade us. Shall it succeed? This is the vital question that we are called upon to meet and, if possible, to solve. The subject is not incapable of solution; but there are difficulties that beset us, owing to the character of our institutions and the organic laws under which we live. It has, on more than one occasion, been shown that the strict enforcement of quarantine laws in America, as well as in Europe, has prevented contagious diseases from entering the seaports of a country when full and judicious measures were put into execution.

During the late war between the States, every seaport along the South Atlantic and Gulf States that was effectually blockaded was spared an invasion of yellow fever. Even New Orleans, which, prior to that period, had been so frequently visited by this disease, was kept exempt from it through the measures resorted to for the purpose by the military commandant. Even after one case had escaped the vigilance of the quarantine officer and had taken up its abode in one of the most populous sections of the city, the disease was prevented from obtaining a foothold by prompt removal of this case to a vessel in the river, which made a speedy exit from the port. Wilmington, North Carolina, which, until the last year of the war, remained comparatively open to vessels plying between that port and the outside world, was subjected to a frightful scourge from yellow fever, owing to its introduction from the Bermudas. Do not these facts warrant the conclusion that yellow fever is of alien origin, and never endemic in this country? I offer this illustration to show what can be brought about when a preventive system of quarantine is scrupulously carried out. The circumstances and environment were such at New Orleans as to make it imperative upon the military officers there to keep the disease out of the city, as the army of occupation was, owing to the configuration of the country, necessarily encamped within its limits. It was an army recruited from the more northerly section of the United States, and unaccustomed to the oppressive and enervating heat of so warm a climate. Had yellow fever once established itself, that army would simply have been annihilated, and the chronicler of the leading events of the war would have found adequate figures of comparison only in the plague of London and the Black Hole of Calcutta. These visitations come to us, however, in the majority of instances, in times of profound peace, when it is difficult to induce the authorities of the country to enact laws sufficiently stringent to maintain a judicious quarantine. In America, while we enjoy the blessings of a freedom never before equaled, the greatest enthusiast will not fail to acknowledge that our form of government has some defects when it is called upon to grapple with questions that require the curtailment of the personal liberty of the citizen for the benefit of the people at large.

There is another drawback to the enactment of general quarantine laws. Our seacoast towns, as ports of entry, are jealous of their local and territorial trade-rights. A grand network of railroads spreads over our entire country, and the ordinary channels of trade can be interrupted and the trade diverted into new directions whenever free ingress and egress to traffic do not exist at any one of our seaports. Appreciating these facts, and ever jealous in guarding their commercial interests, public sentiment in such communities always tends to suppress the truth at the inception of an epidemic; and even the press, usually free and outspoken on all matters in which the general public is interested, remains practically silent until its utterances cease to be news and a widespread epidemic has advertised itself. This is a matter of profound regret; and yet so long as human nature retains its present characteristics we may always expect such causes to produce corresponding results.

To depend upon municipal quarantines for the protection of this great country from the spread of contagious diseases is to reckon without your protecting host. The selfishness of human nature, the desire for gain, the aggressions and the potency of wealth will all be brought to bear upon those in authority, and will, if possible, drive from place and power conscientious officers, who, in the discharge of their duty, fail to comply with their behests and interfere in any way with what they consider their rights and privileges. I trust that I shall not be held as animadverting too severely upon this subject. These remarks are not intended for any particular locality. What I have stated is sustained by the history of the past epidemics that have broken out in our country. No one can ever be safe so long as the local authorities at ports of entry are left as the sole protectors of the nation against the entrance and spread of epidemic and contagious diseases.

The peculiar organization of our Union of States is such as to deter those in official positions from exercising authority in any case except when the right so to do is clear and well defined. The jealous care with which the rights of the States were guarded in the formation of the Constitution and the special declaration by amendment to it, that all powers not specifically granted to the General Government were reserved to the States; the provisions defining the rights of the government and the reserved rights of the States have been the means of engendering more antagonisms than any other issues that have arisen under it. I need not recur to the stirring scenes that have been enacted in the United States Congress on many eventful occasions. The antagonisms referred to brought on our great civil contest, with the results that are so painfully fresh in the memories of all. It is not surprising that politicians are averse to agitating

any questions that may in any manner trammel the rights of the States through laws passed by the General Government.

The trend of public sentiment, as shown by the laws enacted by Congress, and the decisions of the Supreme Court of the United States for the last twenty years, manifest very clearly that the public conscience recognizes the fact that a return to old conceptions on this subject is necessary for the general good of the country. While we may admit this to be true, yet, in the particular issue we have in hand, may we not fall into very grave error by failing to perceive what is clearly our duty to the people as a whole? "The general welfare" clause of the Constitution clearly gives to Congress the right to legislate for the preservation of the health of the citizens of this country and for the prevention of the spread of epidemic and contagious diseases among them. There will be many who will cavil at this application of the clause referred to, and the attempt to enact a quarantine law of a rigid and vigorous character will meet with stout and bitter resistance.

Reared in the school of strict construction as to the rights of the States, I do not hesitate to declare that the time has at last arrived in this country when, owing to the imperative exigency growing out of our great increase in population, the facilities for travel and intercommunication, and the constant flow of immigration from all parts of Europe, all patriots representing every shade of political opinion should unite in demanding of Congress the passage of a law, strong, concise, and yet comprehensive, that will enable the government to properly protect its citizens against disease whenever, in the discretion of its officers, the emergency may have arisen. There is as much reason why the power of the Federal Government should be invoked to aid in repelling the advent of pestilence as to aid in repelling the advent of a hostile fleet or army. Once established, pestilence would cost our country more human lives and more money than a war with any foreign power. These remarks are made in consequence of the failure of our late Congress to pass such a bill. The measures adopted are partial and temporizing, and fall far short of the exigencies of the hour. I shall not attempt to give the details of this law, approved the 15th of February, 1893, known as "An act granting additional quarantine powers and imposing additional duties upon the Marine-Hospital Service." Its provisions are, no doubt, familiar to you all. All of the sections relating to Consular regulations abroad are everything that we could wish; but when the act comes to be applied on this side of the water it is grossly defective. All on the other side of the Atlantic is compulsory; all on this side permissive and coöperative. So long as the government officers are only permitted to coöperate with States and municipal quarantine officials, just so long will the law be imperfectly executed. We must not let the matter rest here. This society should endeavor to arouse the people to a correct appreciation of their danger and of their rights and duties in regard to it, and never cease agitating it until Congress shall be forced to enact such laws as are "necessary and proper" for meeting each and every emergency.

Personally, I am not in favor of a quarantine of detention, but of a quarantine of anticipation and prevention. This is the true way of avoiding the introduction of epidemic diseases into this country. The modern system of quarantine is not a system of exclusion or even of prolonged detention; it is based upon the application of scientific methods and apparatus. I call your special attention to the significant fact that this "system of maritime sanitation" has kept New Orleans free from yellow fever for the last twelve years, and absolutely without interfering with commerce; it has been pronounced by competent observers the most complete system of quarantine in the world, and it should be adopted as a model by the Federal Government for our common defense at every point where pestilence may be imported.

National Board of Health. The importance, indeed the necessity of a National Board of Health organization will be appreciated when it is remembered that the present laws refer almost entirely to quarantine in time of epidemics or threatened epidemics, such laws being carried into effect by the Marine-Hospital Service through the Treasury Department. Every important power in Europe has its chief sanitary bodies independent of the army and navy. In this country, according to our form of government, there are sanitary duties that can and should be performed only by municipalities, and there are duties, especially in time of epidemics, that cannot effectually be performed by cities, but should be looked after by the State, and thus, in like manner, when the States are unable to accomplish what is necessary, then the National Government should do it. This is not the case as the law now stands. Two years ago, at the meeting of this Association held in the city of Washington, a bill was proposed and recommendations were made to the effect that a Minister of Health be created, who should be a Cabinet officer. In the recent legislation by Congress, this bill, though pending, was entirely ignored. At the last meeting of the American Public Health Association, held in the City of Mexico, the Committee on National Health Legislation recommended the appointment of a National Health Bureau and a Commissioner of Health, who should be the *chief sanitary officer* of the United States; said bureau and commissioner (sanitary) to be independent of the Medical Bureaus in Washington. The law that was passed by the recent Congress was a compromise between some of the bills pending in Congress, and, owing to the necessities then existing, the legislation was hurried, and, although in some respects in advance of what had existed before, still to the sanitarians and those interested in the sanitary welfare of the nation it is far from being satisfactory.

I learn that there will be an organized movement to secure legislation by Congress on the lines indicated, and I would respectfully suggest that a committee be appointed from this Association to coöperate with the committee appointed by the American Public Health Association and committees of other important bodies interested in securing the legislation needed.

The Journal of the American Medical Association. I am glad to be able to say that during the past year the *Journal* of this Association has shown marked improvement in its management. I am sure that we may confidently look for still further advancement in the near future.

Before closing this address, I beg to return my thanks to my fellow-members for the honor they have conferred

upon me by calling me to preside over the deliberations of this Association. When I recall the men who before me have filled this chair, and when I see around me those who fill high stations, which their attainments and a just appreciation of the public have given them, I am impressed with my own unworthiness and inability to meet the requirements of this office. For my shortcomings I beg your indulgence.

In the discussions that are to follow the papers that are read and the questions proposed, you will agree with me that it becomes us to display no bitterness or partisan spirit, but in debate, however earnest, very carefully to remember that our opponents are entitled to credit for equal honesty of conviction and purpose with ourselves, and the same desire to further the interests of this Association. The bigotry and intolerance we sometimes see in theologic debates, and the partisan rancor found in political contests, should have no place in questions that come up for consideration in an Association like this.

Let us strive to show to the world that our whole object is scientific work; and our high purpose, the good of mankind.

ORIGINAL ARTICLE.

CONSIDERATIONS CONCERNING ASIATIC CHOLERA.[1]

BY A. C. ABBOTT, M.D.,
FIRST ASSISTANT, LABORATORY OF HYGIENE, UNIVERSITY OF PENNSYLVANIA, PHILADELPHIA.

IN acknowledging the honor that has been done me by your invitation to address you, I do so with a full appreciation of the importance of the subject upon which I have been asked to speak.

The question that is at present of perhaps the greatest moment, not only to the medical men of this country, and of western Europe, but to the laity as well, is that involving the probable reappearance of Asiatic cholera during the coming summer. I have been asked to present to your notice some of the facts in connection with the bacteriology of this disease, and do so in the hope of contributing to a more complete understanding of the channels through which it is disseminated, and of the fundamental principles that underlie a rational prophylaxis against its spread. In order to do this, I must ask you to accept, without question, the modern teaching in relation to cholera, namely, that it is an infectious disease, depending for its existence and propagation upon a specific microörganism that is located within the intestinal canal of all individuals affected with this disease. This microörganism is now generally believed to be that described by Koch, commonly known as the "comma-bacillus" of Asiatic cholera. Though there were for a time after Koch's announcement certain objections to accepting his teachings in relation to the etiology of cholera, these have now practically disappeared, and the weight of opinion is incontestably in favor of the doctrine that he taught.

With the announcement that a definite *materies morbi*, most probably standing in causal relation to this disease, had been found, the attention of the medical world was at once directed to it, and on all sides efforts were made to become familiar with the characteristics of this organism and the means commonly employed for its identification. Perhaps nothing can give a better idea of the impression made by this contribution than the sudden and continuous increase of applicants for admission to the laboratory of which Koch was at that time director. So great was the demand that it became necessary, in order to satisfy it, to organize special courses of teaching, in which only the questions concerning cholera, its diagnosis, and the means of preventing it, were considered. This widespread interest in the subject naturally opened up channels through which many contributions that have added much to our knowledge of the subject have been received.

In so far as the morphological and cultural peculiarities of the organism are concerned, Koch left but little room for addition to his original description, but this represented only the foundation upon which was to be built a superstructure so rich in experimental data as to warrant our claiming acquaintance with the behavior of this organism under the manifold conditions of environment that it finds, not only when located within the intestinal canal, but when outside the body as well; and it is through investigations of this character that we receive the teaching upon which our plans of public quarantine and of domestic and personal prophylaxis are to be based.

In epidemics of cholera, manifestly, the danger against which we are to guard exists in the evacuations of the afflicted individual; and if the evacuations from each and every such individual were disinfected immediately upon being passed, it is safe to predict that the appearance of the disease in an epidemic form would be a thing unknown. Unfortunately, however, this precaution, simple as it is, is more often neglected than employed, and the consequences of such neglect are those that are causing the present agitation.

The question, then, that arises is: If these evacuations do not receive the proper attention at the hands of the attendant, are they likely, after having gained access to sewage or water courses, to cause a dissemination of the trouble?

Among the facts earliest demonstrated in connection with the organism of cholera, was, that it belonged to the group of bacteria known as facultative parasites, that is to say, it is an organism that is by

[1] Address delivered before the American Climatological Association, Philadelphia, May 25, 1893.

nature parasitic, but which can exist for a time outside the body of a living host, and lead a saprophytic form of existence. Perhaps the first observation that conclusively settled this point was the finding by Koch, in a water-tank, at Sahab Bagan, Calcutta, on February 8, 1884, of living comma-bacilli, which could be continuously demonstrated in this water up to the 23d of the same month. With this observation in hand, preparations were at once begun for determining accurately the conditions that favor the life and development of the organism in water, and though the results of these investigations are conspicuous for their lack of uniformity, they, nevertheless, demonstrate the possibility of this organism, not only retaining its vitality but multiplying, as well, in the purest of natural waters; and, contrary to what would *a priori* have been supposed, its growth is not only not favored by gross pollution of the water, but when the contamination is excessive the effect is to shorten the length of time that the cholera-spirillum may live in it. Among the first to take up this study was Koch himself, who states that in ordinary spring-water or well-water the organism of cholera retains its vitality for thirty days, whereas in the canal-water (sewage) of Berlin it died after six or seven days; but if this latter be mixed with fecal matters, the organism retains its vitality for but twenty-seven hours; and in the undiluted contents of cesspools it is impossible to demonstrate it after twelve hours. In the experiments of Nicati and Rietsch it retained its vitality in sterilized distilled water for twenty days; in Marseilles canal-water (sewage), for thirty-eight days; in sea-water, sixty-four days; in harbor-water, eighty-one days, and in bilge-water, thirty-two days.

In the experiments of Hochstetter, on the other hand, the cholera-spirilla in distilled water died in less than twenty-four hours in five of seven experiments; in one of the two remaining experiments they were alive after a day, and in the other after seven days.

In one experiment with the domestic water-supply of Berlin the organism retained its vitality for 267 days; in another for 382 days, notwithstanding the fact that many other organisms were present at the same time. There is no single ground upon which these variations can be explained, for they depend apparently upon a number of factors, which may act singly or together. For example, in general it may be said that the higher the temperature of the water in which these organisms are present, up to 20° C., the more active is their multiplication; the purer the water, that is, the poorer in organic matter, the more quickly do they die; whereas the richer it is in organic matter, up to a certain limit, the more rapid is their proliferation.

Still another point that must be considered in this connection is the antagonistic influences under which these organisms find themselves when placed in water containing organisms that are, so to speak, at home in water—the so-called normal water-bacteria; and Buchner has recently reported experiments to show that when suspended in fluids, and exposed to the direct action of the sun's rays, not only the cholera-spirillum and the bacillus of typhoid fever, but other pathogenic organisms as well, are robbed of their vitality in a relatively short time. Pettenkofer and his associates have also recently recorded observations, not as yet, however, complete, that indicate a part played by higher water-plants in diminishing the number of bacteria that may have gained access to water in which they are growing.

Though considerable variation is seen in the results of these experiments, they, nevertheless, agree in the single point, viz., that the cholera-organism can live, and does multiply, in natural waters; but there is no reason for believing that a single contamination of a water-course used for drinking-purposes, with a cholera or typhoid stool, is sufficient to cause a widespread epidemic of the disease through the multiplication of the organisms added, and it is more than probable that, when such an outbreak occurs, it is due to continuous pollution by relatively large quantities of this material. As water is one of the elements essential to life that is ordinarily used in common by all the individuals composing a community, it is probably the agent most frequently concerned in the propagation of epidemic outbreaks of diseases of which Asiatic cholera and typhoid fever may be taken as types.

In very recent times we have heard a great deal about the part played by water in the dissemination of disease, and while what we have heard is, in the main, true, it is only partly true, and in consequence, the public, while awake to the possible danger from this source, does not, I fear, quite appreciate the point or points at which the greatest danger is to be anticipated. The result is that precautions are taken in one direction, and neglected in another of equal or more importance. To define more clearly at what I am driving: many individuals will say with confidence that they have no fear of cholera entering their household, and will give as a reason that only boiled water is drunk, but if the individual is asked if only boiled water is used in washing his green salads, or for rinsing his milk jug, or if he is certain that boiled water is employed in the manipulation of the dairy from which he receives his milk-supply, the probabilities are vastly in favor of his reply being in the negative. The danger is not alone in the drinking of waters polluted by disease-producing elements, but also, and pro-

bably to a greater extent, in the general use of such water about the household. A very vivid example of the part that polluted water may play in the production of diseases, even though it be not drunk, is the outbreak of typhoid fever in the Third Brandenburger Regiment, described by Gaffky. Every source of infection was excluded except a pump, the water of which was used in rinsing dishes, beer-mugs, etc. Investigation showed that the well of this pump was in direct connection through the soil with a privy-pit, a short distance away, into which the evacuations of a typhoid patient had some time previously been thrown. As stated, the water from this pump was not used for drinking-purposes, but was employed only about the scullery.

A relatively small amount of water used in the average household goes for drinking-purposes, the most being used for kitchen and bath purposes, and of that employed in the kitchen a large amount is subjected to the disinfecting influence of heat. A certain proportion, however, greater than that used as drink, is not heated, but is employed for rinsing, diluting, etc., and in one way or another comes in contact with food-stuffs, some of which are rendered free from danger through cooking, while others come to the table in a raw state. The food-stuffs from which the greatest danger in this connection is to be feared are milk and salads that are used in an uncooked condition. The rinsing of a milk-jug with water consumes ordinarily far more water than the average individual takes at a draught, and if the water be but very slightly polluted with disease-producing organisms, the amount taken as drink may not be sufficient for the production of disease, but if a single pathogenic germ adheres to the sides of the vessel that has been cleansed for the reception of the milk, it rapidly multiplies into many thousands after the milk has been received. Unpleasant as this thought is, it is, nevertheless, one that we cannot ignore. Though only hot water may be employed in the kitchen, there is still the possibility that the milk supplied from the dairy may at the time of delivery be acting as a culture-medium for the organism against which efforts at home are being directed. This need not, of necessity, be due to dishonest dilution of the milk with water, but may arise from the water with which the milk cans were rinsed, and in this connection dairymen should under no circumstances ship their milk in cans that have not been thoroughly *scalded immediately before the milk is placed in them.* In times of epidemics of diseases of this character it is neither wise nor safe to use milk that has not been subjected to the action of heat, either by boiling or steaming, and though prejudice exists, particularly in this country, against the use of cooked milk, it is, nevertheless, our duty to recommend it.

Koch's experiments, and more recently those of Uffelmann, have demonstrated that the comma-bacillus is not robbed of its vitality by freezing, and the investigations of Fraenkel in Germany, and of Prudden in this country, have shown that natural ice may contain anywhere from a few hundred to several thousand bacteria per cubic centimeter. While the bulk of these bacteria are ordinary, innocent saprophytes, there is, nevertheless, a possibility of ice being a source of danger. I do not mean to discountenance the general use of ice, but rather the putting of natural ice *into* water to be drunk.

Still further, in this connection, is a consideration of domestic water-filters. While the results obtained by their use are desirable from an esthetic standpoint, they nevertheless furnish a false sense of security. The best of them are reliable for only a few days, 4 or 5 at the most, and unless they are properly cleansed by scrubbing and "burning out" the condition of the water, from a bacteriological standpoint, after this period is far worse than that of the unfiltered water. When filters must be used, the water to be absolutely safe, should be boiled *after* filtration and not *before*, as is often the practice.

As the danger against which we are to guard in cholera exists in the evacuations of afflicted individuals, it is manifest that by careful attention to these matters we have in our power the means *par excellence* for limiting its spread. A great deal is said and written as to disinfection and disinfectants, and just now the makers of these preparations are busy preparing for an active trade in the near future. Fortunately, the organism causing the disease is among the least resistant of any of the known pathogenic bacteria. It does not form spores; it is highly sensitive to the action of acids and alkalies, and it is killed in five minutes when cultures of it are exposed to a temperature of 65° C. From this it is plain that it is easily within the reach of all those concerned in the treatment or care of cholera-patients to render the evacuations of these patients entirely free from danger without the employment of complicated or uncertain processes.

The simplest and at the same time the most reliable disinfectants for the stools of cholera-patients are chlorid of lime, milk of lime, and boiling water. A one per cent. solution of good chlorid of lime has been shown to destroy the cholera-spirillum in feces in ten minutes. It should be made up as a two per cent. solution and added to the evacuations volume for volume. Milk of lime, ordinary fluid white-wash, when added to these evacuations until the entire mass reacts distinctly alkaline completely disinfects them in one hour. *Boiling hot* water added to these stools, in the proportion of three parts of the water to one of the evacuations, renders them free from danger in ten minutes.

When possible, the disinfection should take place as soon as the stool has been passed, but when this cannot be done, the vessel containing the evacuation or vomit should never be allowed to stand either inside the room or anywhere else uncovered. The reason for this is that flies are known to carry infection from these sources, and it is not improbable that food-stuffs have been infected through this agency. Uffelmann found living cholera-spirilla upon a fly two hours after it had come in contact with a fluid culture of this organism.

There is still another point in connection with the dissemination of cholera, viz., the possibility of its being carried from one locality to another in clothing, baggage, and effects generally of persons who have themselves recovered from the disease, or who have been in places in which the malady was prevalent. Have we any experimental data that may serve to shed light upon this part of the subject? The experiments of Koch and of Kitasato are perhaps the most reliable.

When completely dried, according to Koch's experiments, cholera-organisms do not retain their vitality longer than twenty-four hours, but by others their vitality is said to be destroyed by an absolute drying of three hours. In the moist condition, as in artificial cultures, their vitality can be retained for many months, though repeated observations lead us to believe that, under these circumstances, their virulence is diminished. According to Kitasato they retain their vitality when smeared upon thin glass cover-slips and kept in the moist chamber for from 85 to 100 days, and for as long as 200 days when deposited upon bits of silk-thread.

It is hardly probable that, as dried upon clothing, the drying is absolute, and we see from the experimental data that in this condition the organisms may retain their vitality for a sufficiently long time to again give rise to the disease when favorable conditions are present. Fortunately, as has been stated, the organism is markedly susceptible to the influence of heat, and it is therefore a matter of but little difficulty to render such clothing free from danger. For large quantities of clothing, as one finds in the effects of suspected immigrants, arrangements should be made for conducting the process of disinfection upon a large scale. Properly equipped steam disinfection chambers should be provided, and these should be under the management of individuals who have been taught the proper means of obtaining the best results from their employment.

In hospitals and in private families the same end can be obtained by the use of hot water. An ordinary wash-boiler, filled with boiling water, into which the soiled bed-clothing and underclothing can be placed *immediately that they are removed from the bed or patient*, not only serves the purpose, but serves it just as well as would a more elaborate apparatus.

The question concerning the disposal of the dead is one upon which some discussion has arisen, and as it is of no small importance, it might be of interest to see what experiment has taught us in this connection. In his experiments upon the destiny of pathogenic bacteria in the dead body, von Esmarch was unable to detect later than five days after death living cholera-spirilla in the body of a guinea-pig that had died of the experimental form of the disease; and as a result of experiments performed in the Imperial Health Bureau at Berlin it was found that the bodies of guinea-pigs that had died of cholera induced by Koch's method of inoculation contained no living cholera-spirilla when exhumed after having been buried for nineteen days in wooden boxes, or for twelve days in zinc boxes. In a few that had been buried in moist earth, without having been encased in boxes, when exhumed after two or three months, the results of examinations for cholera-spirilla were likewise negative.

There does not seem, therefore, to be any objection to the burial of the bodies, providing the interment does not take place in a locality where a spring or water course could be directly contaminated; indeed, on the contrary, this method of disposing of infected materials generally is second to cremation only in its requiring a longer time for the accomplishment of the same end.

Protective Inoculations.—In this period of protective inoculation it is not surprising that efforts have been made to discover means of immunifying individuals against the possible infection of cholera by means of vaccination. Conspicuous in this field of research have been Gamaleia, Pfeiffer, Haffkine, and Klemperer, but thus far little has been done to prove protection for human beings. The experiments that have been made upon smaller animals have, in a number of instances, offered a favorable outlook, but the difficulties attending their successful employment upon human beings are, I think, too great to warrant the anticipation of their general adoption.

From what has been said we see that the difficulties attending the destruction of the infective agent of Asiatic cholera are by no means so great as those that stand in the way of preventing its invasion through the manifold portals that are open to it. In the first instance Nature does much in the way of limiting the life-period of this organism, but often by no means enough to admit of this limitation coming into play before a great deal of damage has been done. As to the part that we can take in this direction I shall limit myself to these fundamental precautions, viz., if cholera is not already in the household, much can be done to prevent its invasion

by total abstinence from all uncooked food or drink; if cholera is present, we can rest with an easy conscience if each and every evacuation, all vomited matters, and all soiled underclothing and bed-clothing are disinfected, by any of the methods recommended, as soon as they are passed or removed from the patient, for we shall then know that all has been done that can be done by us as individuals in preventing the spread of the disease to those not affected.

CLINICAL MEMORANDUM.

CYST OF PANCREAS; ABDOMINAL SECTION; RECOVERY.

BY R. EMMETT GIFFEN, M.D.,
SURGEON-IN-CHIEF, ST. ELIZABETH HOSPITAL; COLONEL AND SURGEON-GENERAL N. G. NEBRASKA, LINCOLN, NEB.

MRS. M. L., married, twenty-eight years old, came to me presenting an abdominal tumor that was said by her attending physician to be an abscess of the abdominal wall. On inspecting the abdomen I found it thoroughly painted with iodin, which had been used for several months. There was a history of excruciating pain in the abdomen for two years. The upper part of the abdomen was much enlarged, and on palpation a slightly movable tumor could be detected between the umbilicus and the ensiform cartilage.

The pain was constant, and worse when the woman would lie down than when standing or walking. It was also increased by the taking of food, which caused nausea, but no vomiting. The stomach could be mapped out below the tumor, as low down as the umbilicus.

I advised abdominal section, and after three days of preparatory treatment I opened the abdominal cavity, and found uterus and tubes in normal condition. Kidneys, gall-bladder, spleen, and meso-colon were healthy. Extending the incision above the umbilicus, the stomach protruded. Passing my hand behind the stomach I found a cyst of the pancreas. After evacuating over three quarts of fluid, I shelled out the cyst-wall down to the body of the pancreas, pulled it up, attached it by sutures to the abdominal wall, cutting off most of the cyst-wall, and packed the wound with iodoform-gauze. Hemorrhage was profuse, but by tying all of the vessels with catgut ligatures I succeeded in controlling it, put in drainage-tube, and then closed the abdominal cavity.

The patient rallied nicely. Twenty-four hours after the operation there was no rise of temperature. I removed the gauze and injected the cavity with tincture of iodin. This was followed by slight rise of temperature to 99.5°.

Forty-eight hours after the operation a slight discharge of pus set in, which continued for four days. The patient now commenced to ask for something to eat, stating that it was the first time for four months that she felt hungry. There was no pain and no distress. The woman steadily continued to improve. Nine days after the operation the stitches were removed, the wound having healed, except where the cyst-sac had been attached to the abdominal wall.

Three weeks after the operation the patient was up and walking around. She had gained five pounds in weight, feeling better than for more than a year. Appetite and digestion were improved. Three months after the operation the fistula had entirely healed and the patient was in perfect health.

MEDICAL PROGRESS.

Eclampsia in Children Induced by Hernia of the Cecum in the Inguinal Canal.—FEURER (*Corr.-bl. f. Schweizer. Aerzte*, Jahr. xxiii, No. 9, p. 321) has reported two cases of non-incarcerated hernia of the cecum in the inguinal canal in children, attended with convulsions and, in one case, terminating fatally. The first case was that of a child, six months old, in which a right-sided inguinal hernia had been observed from the sixth week. A truss had been worn, but failed of its purpose. The hernia would occasionally escape and be irreducible for days, and then finally return spontaneously. There had never been symptoms of incarceration. On one occasion the hernia could not be reduced, and symptoms of obstruction appeared, together with convulsions. Herniotomy was decided upon, but during the inhalation of chloroform the hernia was reduced by taxis. A short time later the child was again seized with convulsions, which, it was noticed, usually occurred before the bowels were moved and gas was passed, and in one paroxysm death took place, in the absence of symptoms of obstruction. Upon post-mortem examination the vermiform appendix was found in its entire length in the inguinal canal, with its extremity adherent to the testicle. There was no evidence of inflammation or of constriction of the bowel. The second case occurred in a child, five months old, likewise with an inguinal hernia that had been observed from the sixth week. For some time convulsions had occurred at the time of stool. Although the hernia was readily reducible, the experience of the previous case led to the performance of a radical operation. In the hernial sac were found the appendix, which had formed numerous adhesions, and the cecum. The child recovered, and the convulsive seizures did not again occur.

Pulsatile Exophthalmos.—At a recent meeting of the Société de Chirurgie of Paris, PICQUE (*L'Union Méd.*, 1893, No. 55, p. 657) reported the case of a man, sixty years old, who was run over by a carriage and suffered a fracture at the base of the skull. Hemorrhage from nose and ears continued for three or four days, when a roaring noise became perceptible upon the left side of the head. In a short time the left eye became prominent, with impairment of vision. In the absence of pulsation it was thought that a phlegmonous cellulitis had taken place about the globe; but puncture failed to disclose the presence of pus. After the lapse of a month, however, pulsation appeared, accompanied by thrill, and the diagnosis of arterio-venous aneurism, involving the internal carotid artery and cavernous sinus, was immediately reached. The condition of the patient forbidding ligature of the carotid artery, compression was employed, with results that were ultimately successful. In this case, as in others, the aneurism formed on the side opposite to that which received the traumatism and on which the fracture occurred.

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SATURDAY, JUNE 10, 1893.

THE WORK OF AMERICAN MEDICAL ORGANIZATIONS.

THE current and the preceding issues of THE NEWS have largely been devoted to recording the proceedings of those important medical associations that are now holding their annual meetings. To report the original papers and discussions in full is beyond the scope of a weekly periodical, but by means of a well-trained corps of special reporters and the kindly assistance of the presiding officers of sections, THE NEWS is able to present a condensed and interesting narrative of the transactions of each day, while the free use of the telegraph lends the added attraction of very prompt presentation. These journalistic methods necessarily involve a very considerable outlay, but in incurring such expense THE NEWS feels that it is but performing its duty to its subscribers, who weekly look to it for a full and prompt story of all that goes on in the world medical.

Among the vast array of papers will be found a good many that merit special attention, as detailing the results of original thought and observation, and that do great credit to their authors and to the bodies whence they emanate.

EDITORIAL COMMENTS.

Dr. George M. Sternberg, the new Surgeon-General of the United States Army, was born June 8, 1838 in New York. He was appointed Assistant Surgeon in 1861, Captain and Assistant Surgeon in 1866, Major and Surgeon in 1875, Lieutenant-Colonel and Deputy Surgeon-General in 1891. He was brevetted Captain and Major "for faithful and meritorious services during the War"; and Lieutenant-Colonel "for heroic conduct in the performance of duty at the Battle of the Clearwater, Idaho," in 1877. Dr. Sternberg was a member and the secretary of the Havana Yellow Fever Commission of the National Board of Health in 1879; delegate from the United States to the International Sanitary Conference at Rome in 1885. In 1887 he was detailed, by direction of the President, in pursuance of an act of Congress, to make investigations in Brazil, Mexico, and Cuba relating to the etiology and prevention of yellow fever. In 1892 he was appointed Consulting Bacteriologist to the Health Officer of the Port of New York by authority of the War Department, and in compliance with the special request of the Health Officer of the Port of New York and the Advisory Committee of the New York Chamber of Commerce. He is a member of many learned and scientific bodies and has contributed largely to medical literature. By virtue of his scientific attainments and original investigations, as well as of active service in the field, the appointment of Dr. Sternberg will receive the cordial approval of the medical profession. The country, the President, and Dr. Sternberg are to be congratulated on a deserved promotion.

The Nystagmus of Dyspnea.—FRENKEL (*Lyon Médical*, 1893, No. 20, p. 43) has observed a form of nystagmus in conjunction with dyspnea in rabbits, as a result of injections of urine for purposes of experimental observation. The ocular movements were sometimes lateral, sometimes vertical, and synchronous with the respiratory movements. The observation is particularly interesting in connection with a form of Cheyne-Stokes nystagmus described by Bullard and Wentworth (*Boston Medical and Surgical Journal*, No. 13, cxxvii, p. 301).

Expert Medical Testimony.—Dr. Landon Carter Gray, of New York, proposes a plan that will place the expert testimony of medical men in suits at law upon a useful, intelligent, and impartial basis. He recommends the selection by the presiding judge of medical advisers to sit with him on the bench in trials that do not need juries. In cases tried by jury there should be a conference of all of the medical experts.

Pensions for Physicians' Widows.—A proper movement has been undertaken in France, where it is proposed to place the widows of medical men who die during an epidemic, while engaged in their professional duties, upon the same footing as widows of officers who die upon the battlefield, with the intention of obtaining for the one the same compensation as that provided for the other.

Dr. W. P. Northrup, for many years pathologist to the New York Foundling Hospital, has been elected to fill the vacancy on the board of visiting physicians caused by the death of Dr. Charles C. Lee.

ASSOCIATION OF AMERICAN PHYSICIANS.

Eighth Annual Meeting, held at Washington, May 30, 31, and June 1, 1893.

(Continued from page 614.)

SECOND DAY—MAY 31ST.

THE Discussion on Myxedema was opened by a paper by Dr. KINNICUTT, which was read by DR. THOMPSON. The view of Horsley, that the thyroid has a hemopoietic and a mucin-excreting function, is not accepted as proved. Clinical and pathologic observations show that removal or atrophy of the thyroid results in the development of the cachexia strumipriva or of myxedema. Up to the present time seventy-six cases of myxedema have been treated with a glycerin extract of the thyroid gland. It has been shown that just as good results can be obtained from feeding the raw thyroid.

To illustrate the clinical history a typical case was reported in elaborate detail. The pulse, temperature, respiration and excretion of urea were all increased under injections of thyroid extract. Great improvement resulted.

DR. JAMES J. PUTNAM reported three cases of myxedema successfully treated by thyroid preparations of different kinds. One was that of a woman in middle life who had had the disease for upward of fifteen years in a pronounced and typical form. The treatment by injection was begun in July, and the improvement began to show itself in two weeks. She is now practically well, and instead of being bald, as before, she has a dense growth of hair.

The morbid symptoms that appear during the thyroid treatment are thought to be due not to the extract itself, but to the rapidly changing condition of the heart and bloodvessels, and perhaps also to the rapid absorption of substances from the tissues.

The second case was in a woman in whom myxedema appeared at the menopause, and is especially interesting because of the family history, the rapidity of improvement, and the fact that for several years previously the thyroid had been enlarged (as it still is) and tachycardia had been present.

The third case was regarded as important on account of a history of severe headache, associated with atrophy of both optic nerves. This case brings up the relation of myxedema to akromegalia.

It is not believed that the relationship of myxedema and exophthalmic goiter is at all close. It is not probable that exophthalmic goiter is due to enlargement in the same sense that myxedema is due to atrophy of the thyroid. Certain forms of obesity, however, stand nearer, perhaps, to myxedema, which in a modified form is perhaps more common among elderly people than has been supposed.

There is a similarity between exophthalmic goiter and the first stage of cachexia thyreopriva. The results of partial thyroidectomy (which appears to have been so successful in partially relieving the symptoms of exophthalmic goiter) form an argument of value in favor of the thyroidal origin of that affection; but the question can by no means be decided positively. The theory that the symptoms are due to excessive or vitiated thyroid secretion, though important, still lacks proof.

It is difficult to define the condition of the thyroid necessary to cause myxedema. Sometimes the functions of the gland seem to be only temporarily inhibited. It is a question whether a small part of the gland is functionally equivalent to the whole.

Recent pathologic observations are conflicting regarding the compensatory enlargement of the hypophysis cerebri after thyroidectomy, and regarding the function of the hypophysis.

DR. M. ALLEN STARR, of New York, reported three cases of myxedema successfully treated with thyroid extract. One was in a married woman, forty-six years old, in whom myxedema developed after the birth of a fifth child.

Improvement began ten days after the institution of treatment with the glycerin extract, and has been steady; but the mental improvement has been greater than the physical. The maximum dose was equivalent to one-half a gland.

The second case was in an unmarried woman, twenty-two years old, with a neurotic family history. Hallucinations and delusions, with profound melancholy, appeared after a severe shock. After several months of treatment with thyroid extract the mental condition greatly improved. Insomnia, however, remained.

The third case was in a married woman, forty-six years old, with paralysis of the right side of the face. Grave secondary symptoms appeared upon the institution of treatment with thyroid extract, but afterward the improvement was marked, both mentally and physically.

All three patients had hallucinations of sight and one of hearing. Two had delusions, and all had suicidal intentions. In all, the symptoms resembled those of mild dementia, with partial loss of will-power.

DR. W. GILMAN THOMPSON reported a case of myxedema. The patient was a woman, forty-four years old. The disease began twelve years ago, with swelling of the face, dryness of the skin, weakness, drowsiness, and alopecia. The symptoms have slowly progressed. There have been visual and auditory disturbances and loss of memory, but no hallucinations. The mental condition was dull, and the patient was drowsy, listless, and weak. There was slight albuminuria. In treatment a glycerin extract of thyroid gland was employed. There has been steady improvement in both the physical and the mental condition.

DR. SHATTUCK referred to the case of a young woman with mental exaltation. Under thyroid injections the condition of the skin improved, but the mental condition changed to one of depression, with marked suicidal tendency. For a time treatment was omitted. Subsequently a desiccated extract was used, but without any improvement. The case was undoubtedly one of myxedema, but the therapeutic test is wanting.

A second patient complained of excessive lachrymation and nasal discharge, with looseness of the bowels. The desiccated extract was tried, but had to be given up on account of pains in the legs and anginoid attacks. Under a smaller dose, however, the improvement has been marvellous, and the dose was well borne. There is great danger in over-dosage.

DR. WELCH said that in dogs the extirpation of part of the thyroid gland is followed by a so-called hypertrophy, but the tissue formed bears no resemblance to

the original gland. Again, this same alteration occurs as the result of interference with the gland in various ways. Gradual removal has been practised without the production of thyroid symptoms.

DR. PUTNAM emphasized the statement that the appearance of myxedema may be simulated by that of chronic nephritis, and suggested that elderly, obese persons, with slight edema, may be benefited by thyroid treatment.

DR. STARR advised that in case of apparent failure the dose should be gradually increased.

DR. WILLIAM OSLER read a paper on "Sporadic Cretinism in the United States." He would limit the designation of cretinism to a form of idiocy associated with or based upon absence of the thyroid gland. In sporadic cretinism the condition reaches its height at about the fourteenth year. There are three grades of cretinism, depending upon the mental state. The important criteria are the stunted growth, the condition of the skin and connective tissue, the mental condition, and the condition of the bones.

In the sporadic cases the thyroid is usually absent. The conclusion was announced that cretinism is mistaken for various forms of idiocy, and that the disease is very rare.

Cretinism occurs where goiter is common. It does not occur endemically in this country. The statement of Hirsch as to the prevalence of goiter in Vermont and elsewhere is not borne out by present investigations. Goiter only prevails extensively in the neighborhood of Kingston, Ontario.

Thyroid extract benefits cases of sporadic cretinism when seen in the first few years. Photographs were exhibited of several cases—one in a child of three years, one in a girl of nineteen.

The photograph was exhibited and the notes read of a rare case of operative myxedema in a patient of Dr. McGraw, of Detroit.

DR. E. L. TRUDEAU exhibited "Rabbits under Tuberculin Treatment." He said that experimental tuberculosis can be cured by means of tuberculin, but the results are very variable, depending upon the number and virulence of the microbes employed in inoculating the eye. The permanency of the results is not yet established.

The bacillus of tuberculosis in birds is different from the bacillus of tuberculosis in man in being much easier of cultivation. It can be cultivated in the absence of oxygen, and in general is not fatal to guinea-pigs and rabbits. Rabbits were also exhibited in which immunity had been successfully established by vaccination, but it could not be said whether the result would be perfect or not.

DR. WELCH stated that of three rabbits sent him by Dr. Trudeau, none developed general tuberculosis. The animals treated with bacterio-protein became extremely emaciated and finally died. Here, then, was extensive caseous degeneration of the eye, but no general infection. The animal inoculated with the filtrate was cured.

DR. WHITTAKER stated that he has employed tuberculin continuously ever since he first obtained it. It relieved the depression of pulmonary tuberculosis more than any other agent. The effect continues until some complication arises in consequence of secondary invasion by pyogenic bacteria. The best effects of tuberculin are seen in members of tuberculous families. Tuberculin does harm when complications exist. Individuals cured by tuberculin do not suffer relapses. Moreover, a cure in early cases can be achieved in two or three months.

DR. THEOBALD SMITH read a paper on "Some Problems in the Etiology and the Pathology of Texas Cattle-fever and Their Bearing on the Comparative Study of Protozoan Diseases." He described a pear-shaped intra-corpuscular parasite which exhibits marked variations. In the acute fever the number of infected blood-corpuscles is small, rarely exceeding 2 per cent. The parasite is then fully developed. In the mild fever or in the relapse, the number of infected circulating corpuscles is, as a rule, much greater and may reach 50 per cent. The micro-parasite is always in a very early stage. This is explained by a partial immunity of the infected animal acquired in the acute attack, by virture of which the development of the intra-corpuscular parasite is retarded. In the original attack there is a rapid destruction of red cells, amounting to half a million per c.mm. in twenty-four hours.

An important fact is the indefinite persistence of the parasite in small numbers in the blood of insusceptible animals. Such blood, however, is capable of producing the acute disease in susceptible animals. In other words, a complete symbiosis between an otherwise fatal parasite and the host seems to be compatible with and perhaps necessary to immunity.

Four forms of the same parasite were described, varying from a minute coccus to a pear-shaped body. The disease is probably transmitted exclusively in nature by an ecto-parasite.

The paper by DR. H. C. ERNST, of Jamaica Plains, on "A New Pathogenic Bacillus," was read by DR. WELCH.

The bacillus described is a chromogenic and pathogenic form, isolated from the pericardial fluid in a case of pericarditis. The bacillus of tuberculosis is believed to be associated with it. The bacillus resembles the bacillus pyocyaneus, but has marked differentiating characteristics.

DR. A. C. ABBOTT, of Philadelphia, read a paper on "The Results of Inoculating Milch-Cows with the Bacillus Diphtheriæ."

He referred to the work of Klein, who declares that milch-cows are susceptible to infection by the bacillus diphtheriæ, and that this organism may be detected in the milk of cows that have been inoculated subcutaneously with cultures of the diphtheric organism.

Dr. Abbott has thoroughly gone over the subject again and is unable to confirm Klein's results in any particular. He expressed the opinion that much harm has been done by the extensive publication of Klein's views.

Dr. Welch stated that he was prepared for Dr. Abbott's results, as it is incredible that the diphtheric bacillus should produce such a general infection as Klein has described. It would be interesting to know whether the cat-pneumonia described by Klein as due to the diphtheric bacillus is really due to this organism.

DR. W. T. COUNCILMAN, of Boston, read a paper on "Gonorrheal Myocarditis." He referred to the demonstration of the pathogenic properties of the gonococcus. The secondary results of gonorrhea, especially so-called

gonorrheal rheumatism, were described. A few cases have been reported in which gonococci were found in the joints and fluids.

Dr. Councilman reported the case of a man who was admitted to Boston Hospital, and in which the left knee began to swell ten days after the discharge from the urethra started. Subsequently pain in the chest was complained of, and, not many days afterward, the man died suddenly. The temperature throughout did not exceed 99°. After death the opposed surfaces of pericardium presented dense, membranous masses. The myocarditis was almost confined to the left ventricle. Gonococci were found in the urethra and in the joints. In hardened specimens gonococci were found in the epithelium, particularly in pus-cells on its surface. The myocardium, near the endocardium, presented evidence of degeneration, and in the left auricle, particularly, gonococci were found in immense numbers—none was found outside of pus-cells.

The secondary lesions of gonorrhea are regarded as due to metastasis of the gonococcus, and not to a mixed infection.

DR. LOOMIS stated that he had had a patient with gonorrhea who developed endocarditis during the fourth or fifth week; but there was also diphtheria in the house, with which the man also became infected.

DR. STARLING LOVING, of Columbus, Ohio, read a paper on "Acute Follicular Tonsillitis," which he defined as an acute febrile, specific, contagious, infectious disorder, wholly different from, but in some respects resembling, diphtheria. He thinks the disease due to pyogenic bacteria, which may be found in all cases in the affected crypts of the tonsils. He proposes the name "Tonsillar Fever."

DR. D. W. PRENTISS, of Washington, read a paper on "Sarcoma of the Lung."

He reported a case in which the patient was a male, fifty-one years old, who, four years before, had had sarcoma of the testicle. The diagnosis was made before death by microscopic examination of a fragment obtained by paracentesis.

The disease may be mistaken for tuberculosis or syphilis. In the present case the patient was treated for several months for tuberculosis.

DR. THEOBALD SMITH, who made the examination, explained that the fluid contained small gelatinous masses, in which were cells resembling leukocytes, and single and branched capillaries. He suggested, therefore, that there might be carcinoma.

DR. TRUDEAU referred to a case in which inoculation-experiments were employed, and the diagnosis of carcinoma was reached by exclusion.

THIRD DAY—JUNE 1ST.

DR. JAMES C. WILSON read a paper on "Pulsating Pleural Effusions," which is to appear in a subsequent number of THE NEWS.

DR. OSLER said that since reporting in 1888 a case similar to the first of Dr. Wilson's, he has seen another, in a young woman, in whom a left-sided pleural effusion developed after the performance of celiotomy. The pulsation extended from the sternum to the axilla, and from the clavicle to the fourth rib, and was quite as forcible as in any aneurism. Skoda's resonance was present in the first two interspaces, and dulness below. The exudate was serous. Pulsation ceased when the fluid was withdrawn, and the patient recovered. Subsequently she returned with a large abdominal tumor—a large, strangulated spleen with necrosis—and again recovered after operation.

DR. LOOMIS remarked concerning the treatment, that the earlier a free opening is made the better. In long-standing cases resection with packing is the better treatment.

DR. FITZ agreed as to the necessity for free drainage, but expressed the view that this may be accomplished without packing—in some cases, at least.

DR. OSLER also expressed himself in favor of free opening and packing with gauze, at least for a time, in cases of simple empyema.

DR. WILSON said that at the time of his first two cases the current method of free opening and packing had not been made familiar. The drainage-tube had given good results. Our knowledge of empyemata is not sufficient to allow of dogmatism in treatment. Some cases are capable of management by aspiration and the drainage-tube. This is especially true of the empyemata of children, which are due mainly to the pneumonia-coccus.

DR. A. L. MASON, of Boston, read a paper on "Subphrenic Abscess, with Especial Reference to Cases which Simulate Pneumothorax." He pointed out that abscesses beneath the diaphragm may arise *in situ*, as a sequel of disease of contiguous organs, stomach, spleen, liver, or intestine, or they may extend from the region of the kidney or cecum, in the latter case being sometimes retroperitoneal. If such an abscess contains air, there is most likely communication with some part of the gastro-intestinal tract, usually in consequence of perforating ulcer of the stomach, duodenum, or vermiform appendix. The collection may raise the diaphragm to the level of the third rib and give rise to phenomena resembling those of pyopneumothorax.

Subphrenic abscesses that do not contain air present the physical signs of empyema, which, indeed, may coexist through rupture into the pleural cavity. Such abscesses also occasionally break into the lung, especially when the primary condition is abscess of the liver.

A brief report of five cases was read, in two of which signs resembling those of pyopneumothorax were present. In two of these the cause was the perforation of a gastric ulcer; in one, the perforation of a duodenal ulcer; in one, the rupture of a perinephric abscess. In a fifth case the origin remained undetermined.

An air-containing abscess below the left leaflet of the diaphragm is almost always indicative of a perforating gastric ulcer; such an abscess below the right leaflet is indicative of a perforating duodenal ulcer, though appendicitis may likewise be the cause.

The prognosis depends almost entirely upon the efficacy of surgical treatment. One case in five has recovered. Those due to duodenal ulcer have been fatal.

DR. S. J. MELTZER, of New York, read a paper on "Subphrenic Abscess." He reached the conclusion that the primary cause of subphrenic abscess is, as a rule, to be found in the abdomen. He reported, however, a case in which such an abscess followed lobar pneumonia, and one other such case has been recorded. He looks upon metapneumonic pleurisy as a possible cause of

subphrenic abscess, the causative microörganisms of the former being carried in the lymph-channels below the diaphragm.

DR. OSLER briefly referred to several cases of subphrenic abscess. In the first case the abscess was secondary to appendicitis and simulated abscess of the liver. A correct diagnosis was made, and recovery followed operation. The second case was a left-sided pyopneumothorax subphrenicus, with resonance on percussion when the patient was on his back, but with dulness when the patient was on his side. The process was tuberculous, and death occurred from pulmonary tuberculosis. The third case resembled those of Dr. Metzler's, being apparently secondary to empyema. In two other cases the diagnosis was respectively hepatic abscess and empyema. The true conditions were discovered upon operation, and recovery followed.

DR. WELCH said that in the first case of Dr. Osler's the colon-bacillus was found in the pus of the abscess. This is not found, except when there is communication with the alimentary canal. The fact is of interest in the diagnosis. Dr. Welch expressed surprise that cases of peritonitis following pneumonia are not more common.

DR. FITZ said it would be better to consider these cases under the name of "subphrenic peritonitis." This leads more directly both to the true etiology and to the treatment. He referred to a case in which there had been some thoracic inflammation, and subsequently a pleural effusion, with a probable subphrenic collection of pus. A point in etiology is traumatism. Such cases are included under the head of cyst of the pancreas. They do not present true cysts, and are very amenable to treatment.

The paper of DR. JAMES TYSON on "Two Cases of Subdiaphragmatic Hernia," was read by title.

The following officers were elected for the ensuing year: President, Reginald H. Fitz; Vice-President, William Osler; Recorder, I. Minis Hays; Secretary, Henry Hun; Treasurer, W. W. Johnston; Representative on the Executive Committee of Congress of American Physicians and Surgeons, William H. Welch; Alternate Representative, M. Allen Starr; Councillor, John H. Musser.

AMERICAN SURGICAL ASSOCIATION.

Fourteenth Annual Meeting, Buffalo, N. Y., May 30, 31, and June 1, 1893.

FIRST DAY—MAY 30TH.

(Continued from page 614.)

IN the discussion of Dr. Senn's paper, DR. ROSWELL PARK, of Buffalo, expressed the opinion that the method might be practised with advantage when there is much displacement and difficulty in maintaining the fragments in position. In two or three cases he had used Volkmann's method of dovetailing the fragments together with advantage. In other cases he had used chromicised catgut or silkworm-gut, also with good results. In suturing the fragments through holes drilled through the bone, it is often difficult to bring the lower end of the suture around and tie it. It is easier to pass the suture around the bone by means of a modified aneurismal needle. It would seem that the application of the ferrule of Dr. Senn would require considerable disturbance of the soft parts and might give rise to local necrosis.

DR. F. S. DENNIS, of New York, said that he had been in the habit of drilling the bone, and always with success. In some cases small ivory pegs have been driven into the drill-holes. Sufficient attention has not been given to the practice of tenotomy in this connection. By this means muscular spasm is at once relieved, and the patient is made comfortable. By thus securing physiologic rest, the liability to non-union is reduced to the minimum. In simple fractures it is not a bad rule to divide the tendons at once.

There is no question as to the development of malignant disease in ununited fractures. Dr. Dennis has seen some fifty cases of sarcoma develop as a result of traumatism in bone, and these have usually been cases in which there has been some mobility of the fragments. Epithelioma has also been seen in cases in which there has been a sinus running down to loose bone.

The amount of disturbance of the part might be obviated by dividing the ferrule into two parts and securing these together after their application.

DR. DEFOREST WILLARD, of Philadelphia, remarked that at the Presbyterian Hospital of Philadelphia, Dr. Allis and himself have been using methods of direct fixation when there is great tendency to displacement. In order to facilitate the application of sutures, he has had made hollow drills, through which the suture can be readily passed. He has seen a number of cases of Gluck's ivory insertions, but in in every case but one the ivory plug had been discharged or was in process of discharging.

The method of dovetailing referred to by Dr. Park is valuable. The fragments may be held together by the use of screws. Dr. Allis uses steel screws for this purpose, which can be removed later, if necessary.

The use of a plaster-of-Paris dressing is one of the most important elements in the treatment of compound fractures.

DR. G. MCLANE TIFFANY, of Baltimore, failed to see how the ferrules could be used with advantage in comminuted fractures, as their application would be liable to cause separation of some fragments that might otherwise unite. There is no method applicable to all cases, and often the method cannot be decided upon until the fragments are exposed. In cases in which there has been much loss of bone, the use of the ferrule does not seem applicable. It such cases the steel splint, with steel screws, has, in Dr. Tiffany's hands, been the only method of holding the fragments together. In compound comminuted fracture the fragments may be placed in position with the finger and held in place by the plaster-of-Paris bandage.

DR. M. H. RICHARDSON, of Boston, said that in most cases of ununited fracture treated by the application of silver wire, recovery follows satisfactorily. The same is true of the use of ivory pegs. Occasionally the application of the ferrule will prove of service. Dr. Richardson reported a case of transverse fracture of the humerus operated on several times by silver-wire sutures, but without securing union. In such cases, in which it is desirable to keep the bones from slipping transversely, the method of Dr. Senn will answer a useful purpose. In ununited fracture, with extensive loss of substance,

the periosteum and medullary cavity do not come in contact, and it is difficult to see how this is provided for by the method described.

DR. J. COLLINS WARREN, of Boston, had also operated on the case referred to by Dr. Richardson, but the lack of union was due rather to the condition of nutrition than to failure of mechanical appliances. The patient is five feet eight inches in height, and weighs 300 pounds. At the suggestion of Dr. J. J. Putnam, the patient had recently been put on the use of thyroid juice. During three weeks of treatment he had lost 10 pounds in weight, but the method had not been continued sufficiently long to determine what the ultimate result will be.

DR. N. SENN said that he did not protest against the use of external support; nor did he charge this with the production of permanent damage. He had alluded to continuous extension for six or eight weeks as being productive of such results. There is no method of direct fixation that will render external mechanical support unnecessary. All that he wished to overcome was the tendency to lateral displacement, and by such direct means to bring and hold similar anatomic structures in mutual contact. The angular deformity and rotation can be overcome by the use of plaster-of-Paris bandage.

DR. J. COLLINS WARREN, of Boston, read a paper on "Hypertrophies and Degenerations of Cicatrices and Cicatricial Tissues." He first traced the evolution of cicatricial tissue. Lymphatics are not usually found and nerves are rarely seen in scars. Scars rarely disappear entirely; they usually remain as fine white lines, or, if they have been stretched, as bands; scars grow in proportion to the rest of the body.

The most striking peculiarity of scar-tissue is its tendency to contract. During the healing process this acts in a beneficial way. It is also the cause of the most marked deformities. This contraction of cicatricial tissue is not due to any intrinsic contractility of the tissue itself, but to the absorption of new-formed tissue. Scars are not ordinarily painful, but they may become the source of pain by adherence to sensitive structures.

Among the most common pathologic conditions observed in scars is the hypertrophic condition known as keloid. True keloid is extremely rare. It seldom disappears. False keloid may develop in almost any part of the body.

Carcinoma not infrequently forms in cicatrices, usually after these have existed for several years.

Calcareous degeneration of a cicatrix has been reported. A common complication in the life-history of scars is suppuration, which may be due to re-infection, or to the awakening of spores that have long been dormant. A most common form of relapse is due to tuberculosis.

Every effort should be made to limit the development of scar-tissue. Animal sutures should be used if they are to be buried. Very superficial sutures should be used freely. The checking of the superabundant growth of granulations has been strongly recommended, as the contractility of the cicatrix is largely dependent upon the amount of granulation-tissue that becomes organized. For projecting scars, compression has been recommended. This will often relieve the redness, as well as the elevation. Unna advises friction with sand in the treatment of depressed scars. Pigmentation of scars from gunpowder may be removed by scrubbing with a nail-brush under ether. In older cases the particles of powder may be removed by the punch devised by S. J. Mixter for this purpose.

The treatment of true keloid is discouraging on account of the persistence with which it returns. If excision is attempted the incision should extend one or two cm. beyond the limits of the disease and into the muscular aponeurosis. Compression is recommended by many writers for the treatment of false keloid. As keloid is a connective-tissue structure, it is possible that an inoculation with the virus of erysipelas might produce absorption. It is doubtful, however, if such a powerful remedy would be justifiable. Skin-grafting, after the method of Thiersch, may be employed with advantage in case of broad and flat cicatricial keloids. A case was reported in which this method had been employed, and thus far (several months) there has been no return of the tumor.

DR. GEORGE R. FOWLER, of Brooklyn, stated that the fact that keloid more frequently follows wounds in which there has been much suppuration suggests a microbic origin. In regard to epithelioma developing in cicatrices, it was noted that it has a tendency to spread upon the surface and rarely passes into the depths of the tissues. In the treatment of this condition there should be early and radical extirpation.

DR. L. MCLANE TIFFANY, of Baltimore, said that in the Southern States keloid is exceedingly common, but he knows of it only as a cicatricial disease. He has never seen a case of so-called non-cicatricial keloid. In the negro the disease is prone to undergo retrogressive changes after the age of forty or forty-five years. The affection rarely occurs before the age of eight or ten years. In the white race it may be confidently expected that keloid will disappear or not make much progress after the age of twenty-five years. The case of a girl who, at the age of seven years, was severely burned on the face, breast, and arm, was reported eighteen months after the accident. The scar was of a bright-scarlet color, and half an inch in thickness, resembling a heavy plate of cartilage. The advice given was to let it alone. Twelve years later there was a white, perfectly mobile scar. Dr. Tiffany was inclined to think that operative measures in young persons, either white or colored, are unwise.

DR. M. H. RICHARDSON, of Boston, remarked that in cases of abdominal incision, it is important to bring the parts together so as to secure union by first intention. In open wounds that heal by granulation there is a great tendency to hernia.

DR. J. COLLINS WARREN said that the point that had impressed him was the absence of contractility in the scar-tissue, which formerly was believed to exist. It is absorption that causes the traction. The scar-tissue itself yields before pressure; therefore the importance of accurate coaptation, not only to make the scar small, but to have no scar at all, and to have regeneration instead of repair.

DR. M. H. RICHARDSON, of Boston, read a paper entitled "Surgery of the Gall-bladder." He stated that it is seldom possible to cure or even relieve malignant diseases involving the gall-bladder or gall-ducts. With a

few exceptions, operations are of questionable value in most cases of chronic obstruction to the flow of bile from causes other than stone.

A gall-bladder may be much enlarged; its functions may be entirely destroyed, and it may contain a large number of stones, in the absence of any symptoms. While it is justifiable to relieve this condition of simple dilatation, to avoid possible future complications, interference is not essential unless pain and local and constitutional disturbances be present.

Impaction of the common choledoch duct causes universal jaundice, which may lead to fatal cholemia. The gall-bladder and the biliary passages become distended. Perforation frequently occurs, with escape of bile into the peritoneal cavity, and death; or spontaneous cure may follow rupture into the intestine, the stone remaining fixed in the canal. At other times the stone makes its way by ulceration into the intestine, and permanent recovery takes place.

Operations on the gall-bladder and biliary passages should not be undertaken until every diagnostic means has been exhausted. Unnecessary explorations should be avoided. In some cases the presence of malignant disease, or other mortal organic disease, can be shown clearly enough to justify non-interference. The point recommended for exploratory incision is just to the right of the rectus muscle, opposite the tip of the cartilage of the tenth rib. An incision an inch and a half long is sufficient. If necessary, the opening may be continued upward along the border of the rectus muscle and outward parallel to the border of the ribs.

Gall-stones limited to the gall-bladder being the most frequent occasion for surgical interference, cholecystotomy is the most common of the surgical procedures about the liver. Normally the operation is a simple one. The gall-bladder may be sewed into the wound and incised at once, or its opening may be deferred a day or two. The so-called ideal operation, in which the opening in the gall-bladder is immediately closed, is the preferable one when practicable. When the gall-bladder is contracted, so that the fundus cannot be brought in contact with the abdominal wound, immediate incision, with drainage, and total extirpation are the alternatives.

Extirpation should not be attempted unless the gall-bladder can be easily separated from adjacent structures. Besides lessening danger at the operation, it shortens convalescence. Yet even after extirpation, drainage and gauze tamponage are necessary.

There are few conditions of the hepatic duct that admit of operative manipulation. In health, the duct cannot be catheterized. When dilated it may be explored through the gall-bladder. Stones impacted in the duct may at times be crushed; at other times incision is required. After apparent occlusion, the cystic duct at times becomes pervious as soon as the gall-bladder is opened, perhaps by subsidence of inflammatory stenosis from long-continued irritation of the stones.

Operations upon the hepatic and upon the common choledoch duct are indicated when stones become hopelessly impacted in either. The incisions may at times be closed by suture, but often this is impracticable. A rubber or glass drainage-tube should then be placed in the duct, with siphonage, and the whole protected with gauze. In no case of operation upon the biliary passages has death followed remotely or immediately as the result of biliary obstruction, and in no case has septic infection from this cause been observed.

In chronic organic, non-calculous obstruction, chronic and fatal cholemia may be expected unless the escape of bile either externally or internally can artificially be provided for. Anastomosis between the gall-bladder and duodenum is preferable, when possible. Deviation of the flow of bile into the colon seems compatible with health, and is often more feasible than the duodenal route. The anastomosis may be made by means of Senn's plates, or Murphy's buttons, or mechanical devices may be omitted altogether. The essential point is to have the opening large enough to insure permanency. If the gall-bladder cannot be used for anastomosis, the common duct may be isolated and introduced through a slit into the duodenum.

Operations upon the common duct by way of the duodenum may be practised under very exceptional circumstances.

Obstructions in the hepatic duct, above the point of junction with the cystic duct, admit of no relief, except occasionally by the formation of a fistula, although theoretically the duct above the constriction, if long enough, might be inserted into the gall-bladder.

The prognosis after simple exploration is good, although the mortality is considerable in advanced organic disease.

After cholecystotomies, extirpations, and operations upon the ducts, recovery takes place in a large proportion of the cases. In fourteen cases, including all methods of gall-stone extraction, Dr. Richardson has had two deaths: one from avoidable sepsis and the other from hemorrhage. In six exploratory operations there were two deaths, both cases of carcinoma.

In most of the cases there had been marked and long-continued jaundice. In none had hemorrhage been an important factor at the operation, and in but one had there been secondary hemorrhage. Hemorrhage is a real danger in cholemia, but its frequency and importance have been exaggerated.

DR. J. EWING MEARS, of Philadelphia, referred to the occurrence of symptoms simulating malarial fever in cases of gall-stone obstruction, and reported such a case, in which the stone was impacted in the common duct. The calculus was forced into the duodenum, and the obstruction was removed.

In case of contracted gall-bladder, when drainage by glass and gauze is required, a ligature could be applied to the duct and the gall-bladder be permitted to remain in place. In that way the danger of attempting to remove the contracted bladder may be obviated.

DR. WM. H. CARMALT, of New Haven, said that in 1886 he had performed ideal cholecystotomy in a case in which the patient had previously been operated upon for floating kidney, and in which it was believed that the condition was one of movable kidney. Instead, however, the gall-bladder was found distended with bile, from impaction of a gall-stone in the cystic duct. The obstruction was removed, the wound in the gall-bladder closed, and the organ returned to the abdominal cavity. The patient made a perfect recovery.

DR. T. A. MCGRAW, of Detroit, ascribed the liability

of the opening made in anastomoses between the gall-bladder and intestine, or between intestine and intestine, to contract, to separation of the mucous surfaces, with the formation of cicatricial tissue and subsequent contracture. To overcome this difficulty, instead of a simple slit in the gall-bladder, flaps are made and turned back, and the peritoneal surfaces united. Then these flaps are inserted into the incision in the bowel, and the edges of the incision in the gall-bladder are secured to those of the incision in the intestine. There thus results a projecting ring of mucous membrane through the intestinal opening.

DR. T. F. PREWITT, of St. Louis, referred to a case in which he had operated for floating kidney, and had found a distended gall-bladder. The lumbar incision was closed and the gall-bladder opened through the anterior abdominal wall. A stone was found impacted in the cystic duct. This could not be readily dislodged, and as the condition of the patient did not warrant prolonged operation, a fistulous opening was made. Subsequently a second operation was performed, with a view of getting rid of the stone. This could not be crushed, and needles had no effect upon it. It was finally removed piecemeal with the curet.

DR. STEPHEN H. WEEKS, of Portland, Me., reported a case of cholecystotomy in which the gall-bladder was found much contracted. It was incised, and a rubber drainage-tube, with gauze packing, introduced. The condition of the patient, which before operation had been critical, at once began to improve.

DR. DE FOREST WILLARD, of Philadelphia, exhibited a gall-bladder and a number of gall-stones removed on account of suspected malignancy. Since the operation (seven weeks) the patient has greatly improved, having gained thirty or forty pounds in weight. One stone, lodged in the duct, was gently forced into the duodenum.

SECOND DAY—MAY 31ST.

The morning session was held at the Buffalo General Hospital, where a number of interesting cases were exhibited to the Association.

At the afternoon session DR. C. B. NANCREDE, of Ann Arbor, read a paper entitled "Surgical Treatment of Cervical, Thoracic, and Abdominal Aneurism."

His conclusions were that in the treatment of cervical aneurism all methods should be supplemented by recumbency and diet. Proximal compression, when feasible, should always be tried, and, when the arterial coats are seriously diseased, should supersede ligation. Needling should supplement pressure when the case is progressing rapidly. Possibly it is advisable in all cases suitable for compression, and is certainly to be employed when this method fails in cases with highly atheromatous vessels. Proximal ligation, having been rendered much safer of late by the use of aseptic precautions, less absorbent ligatures, and the avoidance of all injury to the arterial walls by applying the stay-knot, is permissible when the arterial walls are relatively sound, until experience decides whether or not needling is superior in its results. As recurrence after proximal ligation almost certainly results from non-deposition of white thrombi and their maintenance in contact with the aneurismal wall, from lack of proper changes of its lining, needling is clearly indicated. When the location prevents proximal arrest of the blood-current, needling is the best operation; distal compression—rarely feasible—might possibly aid in the formation of thrombi.

For the reasons already given, although occasionally successful, the indications for the permanent introduction of such foreign bodies as wire, horsehair, etc., into aneurismal sacs are so much better met by needling that such procedures had better not be adopted. The modern revival of the older method of extirpation of aneurisms should not be attempted for spontaneous cervical aneurisms.

In the treatment of thoracic aneurism all methods should be aided by the employment of rest in bed and proper diet. The permanent introduction of foreign substances should not be practised. Needling should be tried, aided by distal compression when feasible during the use of the needles; if this fails, distal ligation should be resorted to. Distal interruption of the blood-current by simultaneous ligation of the carotid and subclavian arteries may be tried. Needling is indicated when complete or partial failure follows distal ligation.

In the treatment of abdominal aneurism all methods should include recumbency and diet. Needling, when possible without injury to the hollow viscera, is the most promising plan. Proximal or distal compression may be tried with or without needling, but to be effectual must be done under anesthetics. The permanent introduction of foreign bodies into the sac is inadvisable.

DR. JOS. RANSOHOFF, of Cincinnati, stated that in one case of aneurism at the root of the neck he had transfixed the sac with two needles, which were allowed to remain ten or twelve hours. Considerable hardening took place in the sac, but rest could not be maintained, and two weeks after operation the patient left the hospital, and died some time later from pressure of the aneurism upon the trachea.

DR. A. G. GERSTER, of New York, read a paper entitled "Surgery of the Rectum," based in part upon the cases treated at Mt. Sinai Hospital, New York, during the four years ending January 1, 1893. During this period 557 patients with rectal disease were admitted; 280 of these were classed under the head of hemorrhoids; next in frequency were fistulæ.

In recently developed and moderate cases of hemorrhoids, depletion of the portal circulation by salines, etc., is often sufficient. In the way of operation, decided preference was given to the clamp and cautery. After thorough stretching of the sphincter and proper preparation of the gut by adequate catharsis, this process has invariably given satisfactory results. Whitehead's or Lange's operation was reserved for the more aggravated cases, characterized by prolapse of the anal or rectal mucous membrane. The results of this operation, if the essential points of the technique are faithfully carried out, are more brilliant and rapid than those of any other known method.

One hundred and eighteen cases of fistula in ano had been operated upon. The time needed for cure varied from five to sixty-five days. The average was eighteen days. The time required for healing was shortened by careful excision of the pyogenic membrane of the fistula and immediate cutgut suture of the wound in tiers.

Among the forty-nine cases of ischio-rectal abscess,

there were some dreadful forms of destructive phlegmon of the ischio-rectal connective tissue. Over one-third occurred in diabetic subjects. The treatment consisted in converting the irregular burrows into a simple and shallow, often very extensive wound. This was followed by immediate improvement, and a marked diminution in the amount of sugar in the urine.

Ulcers of the rectum were treated by excision and suture, with satisfactory results.

Extensive and mostly intractable ulcerative proctitis was observed in six cases—all in women. In four cases linear proctotomy and gradual dilatation afforded moderate alleviation. In two cases inguinal colotomy was performed. In one of these cases excision of the rectum was later resorted to, with a fatal termination, due to collapse from acute anemia.

Eleven cases of prolapse of the anus were treated; mostly in children of tender age. The linear application of the actual cautery was generally followed by a cure.

Rectal polypus was treated in seven cases, mostly in children, by ligature and ablation. An eighth case, one of multiple adenoma of the rectum, was also treated. The masses were burnt off or tied off by ligature. Four weeks later the coccyx and a portion of the sacrum were removed. The rectum was laid open and a number of adenomata high up were removed. The wound was left open and at subsequent periods other tumors were removed as they formed.

Seventeen cases of carcinoma of the rectum were observed. In five cases operation was declined, and in three operative treatment was not considered advisable. In the remaining nine cases inguinal colotomy was performed five times, with one death. Excision of the rectum, according to the method of Kraske, was performed three times, with one death; and once the old-fashioned perineal extirpation was successfully resorted to. Cicatricial or neoplastic stenosis of the rectum was always considered an ample indication for the performance of colotomy. The operation was performed as follows: After thorough purgation, a longitudinal incision was made two inches to the inward of the left anterior superior spine, beginning two inches above Poupart's ligament. The peritoneum was divided and attached to the skin by a few silk sutures. The colon was sought for and withdrawn sufficiently to bring the mesentery of the middle of the coil to the surface; then a long shawl-pin was passed through skin and peritoneum on one side, then through the mesentery behind the gut, and, finally, through the peritoneum and skin on the other side. A circular, continuous suture was run around the incision. Forty-eight hours later the gut was opened by a transverse incision reaching nearly down to the mesentery.

DR. L. S. PILCHER, of Brooklyn, N. Y., said that in dealing with hemorrhoids he had usually practised ligation and removal, but in the more severe cases he had practised excision by the Whitehead-Lange method. The results had been so satisfactory that he had not employed the clamp and cautery. Among the disadvantages of the method of excision are the length of time required and the tendency to free bleeding.

In fistula, good results had been obtained in a number of cases by dissecting out the entire tract and applying sutures. This procedure is not applicable to all cases.

Ten cases of carcinoma of the rectum were treated. In six, relief by operation was attempted. In two of these a fatal termination occurred a short time after operation. In the others relief was afforded for a certain length of time.

DR. H. H. MUDD, of St. Louis, said that some time ago he had given up the use of the ligature, on account of the pain caused by it, and had substituted the use of the clamp and cautery for a period of two years. He has had two severe hemorrhages while using the latter method, and did not consider it as safe as the ligature. He now uses the ligature in a modified way. He cuts through the portion of tumor on the cutaneous surface, and then applies the ligature to the upper portion of the mass.

Cases of carcinoma of the rectum have usually been seen at a late period. In two cases Dr. Mudd has practised extirpation by the perineal method, with success. He has attempted removal after excision of the coccyx and sacrum, but without success. In one case he excised the upper portion of the rectum through the abdomen and made an end-to-end anastomosis, and with success.

DR. L. MCLANE TIFFANY, of Baltimore, said that in cases of ulceration with cicatricial stenosis he had seen improvement follow colotomy, although the cicatricial contraction in some cases almost completely closed the rectum.

DR. T. S. PREWITT, of St. Louis, held that when inguinal colotomy is performed in cases in which there is no hope of restoring the natural passage, it is better to divide the bowel entirely and thus prevent the passage of fecal matter into the distal portion of the intestine. He objected to the closure and dropping of the distal end, as there may be collections of secretion in the bowel that it is desirable to wash out, and this can be done conveniently if the opening is permitted to remain.

DR. A. G. GERSTER said that hemorrhage never occurred from the use of the clamp and cautery if the cautery were properly applied and not too much heat were employed. In the Whitehead or Lange operation, profuse hemorrhage does not occur unless the incision is made too deeply. It should closely hug the inner margin of the sphincter, and the mucous membrane should be stripped off without the use of the knife. In the final transverse division of the mucous membrane a small portion only should be cut at a time, and this secured by suture before another portion is cut.

DR. ROSWELL PARK, of Buffalo, exhibited anatomic specimens illustrating a method of preparation. Preparations of joints were shown, made thirteen years ago, in which the joints were still movable, although they had been exposed to the air.

DR. PARK also made a "Report of an Attempted Bloodless Operation for Malignant Polypus Springing from the Base of the Skull." The case was one of a rapidly growing malignant tumor, completely filling the pharynx, in which operation was attempted at the patient's request. In order to lessen the danger from hemorrhage, the trachea was isolated and a rubber tourniquet passed around the remainder of the neck. While there was no arterial hemorrhage, there was excessive venous bleeding. The jaw was resected and the malignant mass removed. During the operation respiration ceased, and efforts at restoration were

required for forty-five minutes before the operation could be resumed. The patient left the table in apparently good condition, but died the next morning from shock, there having been no bleeding.

The following were elected as the officers for the ensuing year: President, Dr. J. Ewing Mears, of Philadelphia; First Vice-President, Dr. Roswell Park, of Buffalo; Second Vice-President, Dr. Lewis S. Pilcher, of Brooklyn; Secretary, Dr. J. R. Weist, of Richmond, Ind.; Treasurer, Dr. John B. Roberts, of Philadelphia; Recorder, Dr. De Forest Willard, of Philadelphia; Member of Council, Dr. J. Collins Warren, of Boston; Chairman of Committee of Arrangements, Dr. L. McLane Tiffany, of Baltimore.

The following were elected to membership: Dr. H. S. Burrell, of Boston; Dr. Perry H. Millard, of St. Paul; Dr. Albert B. Miles, of New Orleans; Dr. Samuel J. Mixter, of Boston; Dr. John W. Elliott, of Boston; Dr. John Parmenter, of Buffalo; Dr. J. McF. Gaston, of Atlanta. To honorary membership: Prof. Carl Gussenbauer, of Prague.

THIRD DAY—JUNE 1ST.

DR. J. WILLIAM WHITE, of Philadelphia, read a paper on "The Present Position of the Surgery of the Prostate." He pointed out that the prostate gland is a part of the sexual apparatus, and not chiefly an accessory organ of micturition, and that the growth or growths that make up the enlargement are analogous to the fibromyomata so frequently found in the uterus.

The changes in the bladder are due to the mechanical obstruction, the circulatory disturbance produced by pressure on the prostatic veins, and to septic infection.

Purely expectant treatment is proper only when the enlargement causes no symptoms, and cauterization is easy and there is no residual urine. Ergot is the only drug that offers any prospect of usefulness, but it is far from demonstrated that it has any distinct effect. Palliative treatment, consisting in the systematic use of steel sounds for dilatation and the employment of the catheter, is of great value in a large number of cases.

Over-stretching of the prostatic urethra is *not* likely to be followed by good results in cases in which the median lobe and the vesical neck are chiefly involved. In lateral hypertrophy, when the urethra is simply narrowed, it may be of use. Perineal prostatotomy should be regarded as the operation of choice in cases in which, with marked dimunition of the expulsive force, and with cystitis, there are evidence of widespread degenerative disease, or of distinct renal disease, toxemia, and general feebleness. When the growth can be reached by the finger, and is of small size or pedunculated, perineal prostatotomy can always be converted into a prostatectomy. Suprapubic prostatectomy is the operation to be preferred in those cases in which, palliative treatment having failed, there are unmistakable indications that the local conditions are growing worse, the general health remaining unaffected. The question suggests itself that, possibly, if the analogy between uterine fibro-myomata and prostatic growths is a real one, castration might have the same effect upon the latter that oöphorectomy has upon the former. A series of experiments on dogs showed that the average weight of the prostate in dogs was 35.3 grams. After castration and the destruction of the dogs at varying intervals after the operation (the longest interval being seventy-two days) there was in all a marked diminution in the weight of the other prostate, according to the weight of the animal and the period at which it was killed.

As to the employment of castration as a therapeutic measure in prostatic hypertrophy, the final answer must be left with the patient.

DR. ROSWELL PARK, of Buffalo, read a paper on "The Importance to the Surgeon of the Bacillus Coli Communis." Evidence was presented showing that the colon-bacillus, which is constantly present in the intestinal canal, is not always a harmless parasite, but that it at times becomes an active invader, not confining itself to the intestinal mucosa, where it may cause most active degenerative lesions, but penetrating into the general circulation, and exercising pernicious activity in numerous other organs, as well as toxic effects upon the system at large.

Herniary cholera, so-called, is due to intoxication from the products generated by virulent colon-bacilli. From the intestinal canal the colon-bacillus may ascend the biliary passages, determining lesions in the gall-bladder or liver. It is known to be one of the frequent factors in the development of peritonitis of intestinal origin. In the kidneys, as well as in the bladder, the colon-bacillus may display pathogenic and pyogenic properties. The organism may be introduced from without, as upon a catheter, or it may be transferred from its normal habitat by some traumatism of the natural channels. The endocardium, the meninges, the pleura, the synovial membranes, and the lungs are at times the seat of its invasion. It is probable that there is a form of post-operative septicemia due in no direct way to the operator or operation, but, in fact, an enterosepsis, caused by the migration from the intestinal canal of the colon-bacillus. Constant attention to the intestinal canal should therefore be the watchword of the surgeon both before and after operation.

Six cases were reported in which the colon-bacillus was found; in some instances it was the only organism present. The cases were as follows: 1. Carcinoma of the intestine, with abscess; 2. Recurrent peri-appendical abscess; 3. Acute abscess of the liver; 4. Gangrenous appendicitis; 5. Acute appendicitis, with perforation and obstruction of the bowel; 6. Suppurative cholecystitis.

DR. JAMES M. BARTON, of Philadelphia, presented a paper entitled, "When Shall we Remove the Vermiform Appendix?" The following conclusions were arrived at: 1. An unruptured appendix, distended and discolored, should be removed. 2. When rupture of the appendix into the general peritoneal cavity has occurred, the appendix should be removed and the abdomen flushed. 3. When a localized abscess that has existed for some days or weeks has ruptured into the general peritoneal cavity, the appendix should be removed and the abdomen flushed. 4. When adhesions to the abdominal wall have formed, the abscess should be opened and drainage provided for, care being taken not to break the adhesions that separate the abscess-cavity from the general peritoneal cavity; the appendix should not be searched for or removed. 5. When symptoms of obstruction are present, the abscess should be evacuated, protecting the general peritoneal cavity with gauze; the

abscess-cavity should be disinfected, and obstructive adhesions sought for, and if found, these alone separated; otherwise, all adhesions should be separated and the appendix removed. 6. When an abscess has formed and there is no general peritonitis or symptoms of obstruction, the abdomen should be opened, the general peritoneal cavity protected by means of gauze, and the abscess opened and drained; the appendix should not be searched for or removed.

The following papers were read by title: "Cystic Growth within the Internal Condyle of the Femur," by Dr. Thomas G. Morton and Dr. William Hunt, of Philadelphia; "Gunshot Wounds of the Intestines—Report of Thirteen Cases," by Dr. Albert D. Miles, of New Orleans; "Dislocation and Injuries of the Semi-lunar Cartilage," by Dr. S. J. Mixter, of Boston; "Report of Cases of Anthrax," by Dr. H. L. Burrell, of Boston; "Lymphangitis, Accompanied with Blood Poisoning, and followed by Multiple Abscess," by Dr. J. McFadden Gaston, of New Orleans; "Clinical and Medico-legal Observations in Certain Forms of Spinal Injury," by Dr. Perry H. Millard, of St. Paul; "A Series of Operations on the Elbow," by Dr. J. S. Wight, of Brooklyn.

The Association then adjourned, to meet in Washington, the first Tuesday in May, 1894.

AMERICAN PEDIATRIC SOCIETY.

Fifth Annual Meeting, held at West Point, May 24, 25, and 26, 1893.

FIRST DAY—MAY 24TH.

THE meeting was opened by the Address of the President, DR. A. D. BLACKADER, of Montreal. He reviewed the scientific work of the Society during the past five years, in order to show its broad scope and to refute any possible charge of narrow specialism, and then discussed the important bearing that a proper understanding and treatment of the constitutional diatheses in childhood had on adult life.

DR. M. P. HATFIELD, of Chicago, under the title of "This Year's Failures in Diphtheria," then reported six fatal cases of diphtheria, death occurring in each from a different cause and at a different stage of the disease. From the first case he drew the lesson that one should never omit to carefully examine the throat of a child at the first visit, even though it be late in the evening and the child asleep. In another case, the writer reproached himself for not having insisted more vigorously upon a thorough carrying out of the nasal treatment, and for not having given sufficient weight at their onset to the backache, anorexia, and vomiting that were the initial symptoms of the fatal diphtheric nephritis. He saved the sister of this child, as he believes, by more careful attention to these points. Another child, four years old, was apparently recovering rapidly from diphtheria, when, on the sixth day, while sitting up in bed, death occurred almost instantly from heart-failure. He thought it possible in this case that mercurials might have been unduly pushed; at any rate it served to emphasize the well-known danger of paralysis of the heart. The fifth case was one in which intubation was performed quite early and under apparently favorable circumstances; yet the case terminated fatally, as had all other cases of intubation occurring in his practice, whether the operation had been performed by himself or by a skilled consultant. He thought that intubation in the hands of the average practitioner failed to give either the 25 or the 33 per cent. of recoveries claimed for it. The sixth case was that of a child, twelve years of age, who developed a popliteal thrombosis, and was given a single dose of an opiate to control his terrible pain. He died shortly afterward, either of opium-narcosis or of heart-failure induced by the disease.

In the discussion that followed, DR. W. D. BOOKER, of Baltimore, and DR. J. H. FRUITNIGHT, of New York, reported cases occurring in their experience that illustrated the value of intubation, even in severe types of laryngeal diphtheria. DR. A. JACOBI referred to the striking differences in the results obtained by individual physicians in the treatment of diphtheria, and emphasized the importance of strict attention to the nasal treatment, and the *early* employment of stimulants. DR. J. LEWIS SMITH, of New York, said that he was in a position to know that Dr. O'Dwyer was saving more cases of intubation now than formerly, by combining intubation with the frequent use of sublimations of calomel. DR. W. P. NORTHRUP, of New York, tried to encourage Dr. Hatfield to persist in using intubation, by stating that while five out of his first eleven cases of intubation recovered, the twenty-two cases immediately following proved fatal. Autopsies in these fatal cases showed that the membrane had extended into the finest bronchioles, and proved that both tracheotomy and intubation must have been powerless under such circumstances.

DR. J. LEWIS SMITH next read a paper on "The Value of Peroxid of Hydrogen in Diphtheria." He said that he had seen cases in which the use of a fifteen-volume solution of hydrogen dioxid, diluted with two volumes of water, had caused increased irritation, and, in three instances, had even produced a fibrinous film over the parts, as described at the last meeting of the Society. He had also noticed something that was to him entirely new, viz., the occurrence of hoarseness, apparently as a result of the inhalation of the vapor of hydrogen dioxid, when this agent was used in a hand-atomizer. The phenomenon disappeared as soon as the hydrogen dioxid was discontinued. The irritation produced in these cases was probably due to the free acid contained in the preparation. He had found that Marchand's solution requires five grains, the Oakland Company's product three grains, and Squibb's preparation two and a half grains of sodium bicarbonate per ounce to neutralize this acidity. Dr. Squibb had informed him that any solution of hydrogen dioxid having a neutral or alkaline reaction would decompose at ordinary temperatures at the rate of two or three volumes per day. Dr. Smith therefore suggested that a little sodium bicarbonate be added to the solution of hydrogen dioxid each time before using, in order to do away with any possible unpleasant effects from its use.

DR. A. SEIBERT, of New York, detailed some experiments that he had made regarding the comparative efficiency of hydrogen dioxid, aqua chlori, and Labarraque's solution. The last-mentioned solution was found to be by far the most powerful, dissolving in twenty minutes, without agitation, a piece of diphtheric membrane, about one-eighth of an inch square. Hydrogen dioxid

had no such action and did not destroy the bacilli. DR. J. H. FRUITNIGHT had observed the same irritating effects from hydrogen dioxid, and had made use of lime-water as a corrective, because of its solvent action on the membrane, in addition to its alkalinity. He prescribed it separately and obtained good results.

DR. W. D. BOOKER, of Baltimore, reported a case presenting the clinical features of true croup, yet in which the bacteriologic examination proved it to be diphtheric. He also showed that the prevailing view that the diphtheric bacilli do not extend far from the local lesion is not strictly correct, and that by bacteriologic examinations of *large* portions of various organs, a few bacilli may be found, even though none is observed in sections of these organs. DR. HENRY KOPLIK, of New York, said that in cases in which no membrane is visible he had found the most sensitive culture-medium to be the mixture of bouillon and blood-serum. In doubtful cases it is sometimes possible to find at least one colony of the diphtheric bacilli.

SECOND DAY—MAY 25TH.

The work of the second session was opened by the reading of a paper by DR. J. P. CROZER GRIFFITH, of Philadelphia, on the "Use of Antipyretic Drugs in the Febrile Affections of Children." He cited a number of cases illustrating the beneficial action of such remedies, and the fact that the nervous symptoms, and not the degree of temperature, constitute the indication for the use of antipyretics.

DR. T. M. ROTCH, of Boston, presented the report of the committee appointed at the last meeting to revise the nomenclature of gastro-intestinal diseases. The report contained a provisional classification founded on four or five hundred clinical cases, and represented the joint labors of DR. L. E. HOLT and himself. It was especially urged that the term "dysentery" be entirely discarded, and that an attempt be made to classify these diseases more nearly in accordance with our pathologic knowledge. Dr. Rotch also presented the results of the work of Dr. F. FORCHHEIMER and himself in revising the nomenclature of the diseases of the mouth. After a long and earnest discussion, it was decided that these subjects were so intricate and yet so important, that it was better to defer final action for another year.

Next in order came a paper by Dr. LOUIS STARR, of Philadelphia, on "Proctitis in Early Infancy." He said that when with moderate wasting and with indigestion, there is a history of small, frequent movements of the bowels, accompanied by straining, one may suspect the presence of proctitis; and if, with this, there are excoriations about the anus or a catarrhal inflammation of the roof of the mouth, one might be still more certain of its presence. The treatment should consist in flushing out the bowel with warm water and salt, and the use of enemata of oil. In the more obstinate cases it may be necessary to resort to several small injections of argentic nitrate solution—from half a grain to a grain to the ounce. Most of the cases that he had seen had occurred among the better class, and in children that were breast-fed.

DR. A. JACOBI said that proctitis is much more frequent than is generally supposed, and is often of the descending variety, even though it may appear not to be so. He warned against the use of the argentic nitrate injections, especially of the strength mentioned, for he had found them very liable to irritate the rectum and increase the tenesmus. He preferred starch-water injections.

The subject of "Acute Scleroderma" was carefully presented in a paper by DR. WILLIAM OSLER, of Baltimore, who, after referring briefly to the literature, reported a case in detail, with the results of the post-mortem examination. The subject was a child, fourteen months old, who first developed a croupous pneumonia, and eight days later first showed the changes in the skin; with this there was a fall in the temperature to 98° in the rectum, and on the following day the whole body was like a block of wood. Deglutition was impossible, and the body felt cool, although the temperature in the rectum was 99°. Death occurred on the next day, and the autopsy was held a few hours afterward. The body appeared as rigid as if frozen. There was no pitting on the firmest pressure, and the only portions not involved in this strange process were the skin of the head and of the genitals. The microscopic examination showed a peculiar metamorphosis of the connective-tissue fibers already present, so that the structure of the skin bore a marked analogy to that found in portions of the body where the skin is normally comparatively immovable. The majority of clinicians at the present time incline to the neuropathic theory of the origin of acute scleroderma, but there is also much to support the inflammatory theory.

DR. W. P. NORTHRUP said that he had previously presented a case of this kind, and had made a most exhaustive microscopic study of it; yet neither he nor those whose opinions he had sought could find any morphologic change that might be considered characteristic.

DR. A. JACOBI pointed out the fact that the coexistence of pneumonia would account for the temperature in the case just reported being higher than in many of those previously recorded. He was inclined to look upon the condition as due to an effusion of blood containing an abnormal amount of coagulable material.

The Council of the Society had arranged for the evening session two special discussions—one on the treatment of pertussis, and the other on the treatment of constipation in early infancy. As might have been expected, the first discussion, that on pertussis, showed a considerable diversity of opinion, and called forth descriptions of many "favorite methods."

DR. FORCHHEIMER spoke of the great importance of prophylaxis, and pointed out some of the many obstacles met with in practice. One of these is the impossibility of making the diagnosis, under ordinary circumstances, during the first stage, at which time the disease is probably fully as contagious as it is later on. He considered that the best results in the medicinal treatment had been obtained from belladonna and quinine, but from the very variable results with the same drug in different members of the same family, he thought it possible that the cause of whooping-cough might be different in different cases.

DR. OSLER believed whooping-cough to be a specific disease, which runs its course very little influenced by remedies. The only one that has seemed to him useful is quinine. It would be extremely interesting if the profession could secure careful records of a large number of cases observed without any treatment, so that a trust-

worthy natural history of the disease might be written. DR. H. D. CHAPIN, of New York, considered more particularly the complications of pertussis, and spoke of the frequency of capillary bronchitis, pulmonary collapse, and enlargement of the bronchial glands. If mothers were instructed more carefully as to the dangers from exposure to inclement weather, capillary bronchitis would be much less frequent. He cited a case in illustration of the susceptibility of those just recovering from pertussis to the development of tuberculosis, and, indeed, other constitutional diseases.

DR. KOPLIK read a paper on "Heart-strain in Pertussis," and showed by pulse-tracings the marked effect of the paroxysms on the circulatory apparatus. An examination of the urine of thirty-six children suffering from pertussis showed slight albuminuria in eighteen. The occurrence of edema about the face and eyes is an indication for the immediate administration of digitalis with the other remedies usually given. DR. HOLT had made careful comparative studies of the action of belladonna, antipyrin, and other drugs, and had found antipyrin the most serviceable of all. An infant, six months of age, would at first be given six grains a day, and the dose would be cautiously increased. Pneumonia complicating pertussis he had found surprisingly fatal in institution children. DR. NORTHRUP'S pathologic studies had brought out such remarkable examples of emphysema following whooping-cough that he felt anxious to try any remedy that would be likely to mitigate the severity of the paroxysms. DR. FRUITNIGHT had a high opinion of the value of fresh air in the treatment of pertussis, and had also found small doses of bromoform useful in checking its severity. DR. WINTERS spoke very emphatically against the tendency of some to countenance the let-alone treatment, for he considered whooping-cough one of the most fatal diseases of childhood. He found that codeine, in doses of one-twelfth of a grain, every eight hours, to a child two years of age, acted most favorably; and this treatment, combined with counter-irritation, fresh air, and attention to the general health, gave results of the greatest value. DR. SEIBERT was so heartily in favor of the fresh-air treatment that he insisted upon the windows of the child's room being kept open night and day, and in all kinds of weather, and thought that this treatment, combined with the administration of quinine, was the best he had ever tried. DR. A. CAILLÉ also favored the liberal use of fresh air, but employed, in addition, nasal irrigations with boric-acid solution as a prophylactic against diphtheric infection. DR. J. LEWIS SMITH closed the discussion by referring to the comparatively new treatment of applying to the fauces a solution of resorcin—ten grains to two ounces and a half—by means of a brush or spray.

The remainder of this session was devoted to a consideration of the treatment of constipation in infancy. DR. L. EMMETT HOLT said that as the normal stools in infancy usually contain from 20 to 40 per cent. of fat, it followed that the infant's food must contain much more fat than can be absorbed. Good breast-milk contains 4 per cent. of fat, and cow's milk a little less, and consequently the fat of cow's milk is almost wholly absorbed, and the stools, consisting chiefly of casein, are hard. If cream, containing 12 per cent. of fat, is substituted for a portion of the cow's milk, the stools usually become softer. Milk-sugar has little or no effect in relieving constipation, as is well shown by the large number of dispensary patients who are obstinately constipated, notwithstanding that they are fed on condensed milk.

DR. LE ROY YALE, of New York, in discussing the local treatment of constipation, said that massage, faithfully carried out, is a valuable measure. It is best practised on an empty stomach, and should consist in small circular movements made with the tips of the fingers along the course of the ascending, transverse, and descending colon. Rectal constipation is very commonly met with, and is often due to the mechanical disadvantage at which the child is placed when sitting in the conventional position at stool. He has rarely observed undue irritation from medicated suppositories, but a certain proprietary suppository, which is quite popular, has been known on more than one occasion to give rise to symptoms of belladonna-poisoning. He was not sure that the habitual use of enemata caused chronic constipation. DR. LOUIS STARR said he had used with much satisfaction a suppository containing extract of belladonna and purified aloes mixed with cocoa-butter.

THIRD DAY—MAY 26TH.

The scientific work of the last day was opened by a communication from DR. H. D. CHAPIN on "The Preservation of Cow's Milk." He detailed some experiments that he had made in connection with the effect of static electricity upon milk, and while these were not altogether conclusive, they gave promise of some practical results on further investigation. While the plan of adding $\frac{1}{10}$ of 1 per cent. of sodium silico-fluorid has proved efficient, so far as the preservation of milk is concerned, it has not been a commercial success. The author said that as hydrogen dioxid, when mixed with milk, soon decomposes, giving off an atom of oxygen and leaving water, it had occurred to him to test its value as a preservative. He exhibited specimens of milk so treated, and, after detailing his experiments, drew the conclusion that a small percentage of hydrogen dioxid will check lactic acid fermentation. In the discussion, the position taken by most of the speakers was to the effect that efforts of this kind were a step in the wrong direction; investigation should be directed rather to the dairy and to means of purifying the supply and bringing the milk more quickly to the consumer.

DR. IRVING M. SNOW, of Buffalo, read a paper entitled "A Gastric Neurosis in Childhood," in which he described curious recurrent attacks of severe vomiting, occurring in a very neurotic child of eight years. When quite young she had frequent and severe convulsions, and when these disappeared the attacks described took their place. These were accompanied by the secretion of hyperacid gastric juice, which was discharged during the attacks of vomiting. The slightest excitement was sufficient to bring on such an attack, which would terminate very abruptly. The affection finally yielded to the administration of large doses of bromid and chloral by rectum, together with the use of tonics, gymnastics, and other methods directed toward improving the general health.

DR. HOLT cited a similar case that had puzzled many physicians, until finally it was discovered that, while during the intervals the proportion of uric acid to the urea

excreted was 1 to 40, during the height of the paroxysms it sank to 1 to 150. After excluding all sugar from the diet, limiting the quantity of starches, and allowing milk, meat, and bread, the improvement was very striking, and for the past sixteen months there had been no return of the symptoms. DR. CHRISTOPHER, of Chicago, reported a similar case, occurring in an adult, and DR. ROTCH said that he had already written upon this subject, and had seen a great many cases, although they were not commonly recognized as instances of a distinct affection. He looked upon the condition as a reflex disturbance, related probably to the abdominal ganglia, and he did not think dietetic treatment of any value. He advocated starvation-treatment for twenty-four hours, and the use of enemata of bromid and chloral. A lengthy discussion of these points then followed.

DR. B. K. RACHFORD, of Newport, Kentucky, read a suggestive paper on "The Etiology of Incontinence of Urine," in which he took the ground that the three important factors were: (1) irritability or instability of the nervous centers, (2) anemia, and (3) reflex irritation. In about one-half of the cases no important pathologic condition could be found as a cause of this irritability.

DR. F. FORCHHEIMER, of Cincinnati, contributed a paper on "The Treatment of Certain Forms of Anemia in Children." He considers the intestinal tract the principal source of hemoglobin, and has obtained surprisingly rapid and satisfactory results from the administration of such drugs as salol and hydronaphthol before meals, and of blood in some form after meals.

The remainder of the session was devoted to a consideration of a number of clinical reports. DR. HOLT treated of "Meningitis Complicating Pneumonia;" DR. FRUITNIGHT, of the benefit to be derived in cases of rhachitis from the administration of the calcium lacto-phosphate; DR. S. S. ADAMS, of a case of erysipelas of the face and scalp, in which four or five days elapsed after the onset of the constitutional symptoms before the cutaneous flush appeared; DR. HUBER, of an abscess of the lung in an infant of thirteen months; and DR. ROTCH, of the construction of a new incubator for premature children.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Sixth Annual Meeting, held at Detroit, Michigan, June 1, 2, and 3, 1893.

FIRST DAY—JUNE 1ST.

DR. HENRY J. CARSTENS, of Detroit, delivered an Address of Welcome, which was responded to by DR. GEO. H. ROHÉ, of Baltimore.

DR. GEO. F. HULBERT, of St. Louis, read a paper entitled "Intra-uterine Asphyxia, with Report of Three Cases." The first case was delivered by natural means, the other two with instrumental assistance. In all, the fetal heart-sounds had been heard distinctly half an hour before delivery, but somewhat weakened in force. In all, at the time of delivery, the appearance presented by the children was one of extreme pallor, with a deepened tinge of the lips and absolute muscular relaxation. The heart beat at the rate of from 40 to 50 per minute. The usual methods of artificial respiration were resorted to, to the extent of introducing a catheter into the trachea. That air did penetrate was evidenced by the slight crepitus heard during compression of the chest in the expiratory part of the respiratory act. Artificial respiration was maintained until the heart ceased beating; until it ceased to respond to the stimulus presented by the aëration of the blood by the artificial respiration. In none of the cases were there any external evidences of pathologic conditions. The umbilical cords did not exceed the normal limits, but in all three cases blood-clots were found occupying the placental surface in more than half of its area. These clots were well formed, intimately attached to the placental tissue, and smooth upon the uterine side. There was nothing to indicate that the clot had been torn from the uterine surface, but rather that placental separation had taken place and the clot had formed and become adherent to the placental tissue. So far as the mothers were concerned, they were in average good health; the first was a primipara, the last two multiparæ. The labors had not been more than twelve hours in duration, and presented no abnormality other than that in the first case the delivery was of the "piston-rod" variety, the head being forced down to the perineum at each pain, and promptly receding to the brim upon the disappearance of the pain. In none of the cases were the pains sustained and vigorous, but rather short and inefficient. In none was chloroform used, and in only one, the first, a rectal injection of twenty grains of chloral was given during the first stage. The element of compression upon the head was not at all pronounced, and would not have attracted attention. In the last two cases there was no pulsation appreciable in the cord; in the first case no record of this fact had been made. The children were separated from the mothers immediately, and in the first a small amount of blood was permitted to escape from the severed end of the cord. Unfortunately, in none of the cases was a post-mortem examination obtained. There was only a moderate amount of the amniotic fluid following the birth of each child. In the first two cases dilatation was well advanced before the membranes ruptured; in the last case rupture occurred at the beginning of dilatation.

DR. HENRY J. CARSTENS, of Detroit, Mich., related a case similar to those reported, and attributed the condition of the child to either large doses of ergot, given by an irresponsible practitioner, or to some disturbance of the centers of respiration.

DR. JOHN M. DUFF, of Pittsburg, expressed the view that in the case of stillborn children—when apparently before birth they were well, the heart beating properly, etc.—death is due to cerebral hemorrhage. He has seen two post-mortem examinations within the past two years corroborative of this view.

DR. WM. H. WENNING, of Cincinnati, read a paper on "Placenta Previa."

He pointed out that the pathology of placenta previa is far from being definitely settled, owing to the discrepancy between clinical phenomena and anatomic demonstrations. The term was originally employed to express the fact of the after-birth lying before, which might apply to a prolapse of the placenta as well as a primarily low insertion. At the present day it implies a fixation of the placenta to the lower pole of the uterine cavity. Omitting minor points of discussion, the placenta may be said to be previa when it is inserted

wholly or in part to that portion of the lower uterine segment which is subject to distention in pregnancy or labor.

DR. JOHN MILTON DUFF, of Pittsburg, read a paper entitled "The Care of Pregnant Women."

He said that every pregnant woman needs moral and hygienic, if not medical treatment, from the time that pregnancy is recognized until convalescence from the lying-in.

Before attending a woman in labor the physician should be familiar with her personal and family history (medically speaking), so that he may note personal or family idiosyncrasies; discover and treat diseased conditions, if present; determine the presentation, if not the position, of the child *in utero*; ascertain the dimensions of the pelvis, the presence of deformities and the general physical condition; and judge of her ability to withstand the throes of labor—in short, so that he may be able to anticipate any accident or abnormal condition that might arise during labor, and if possible to ward it off or treat it promptly, scientifically, and successfully.

Attention was called to strychnine as an adjuvant in the treatment of disorders of pregnancy and as an aid in parturition.

Good results were reported from the systematic administration of doses of from one-thirtieth to one-sixtieth of a grain three times a day for from two to six weeks prior to the expected onset of labor.

DR. EDMUND M. POND, of Rutland, Vt., read a paper entitled "Dilatation of the Cervix for Dysmenorrhea," in which he advocated the use of a light Palmer dilator, and packing the uterus when the cervix is elastic; to be repeated, if necessary. In case of failure, a heavy dilator is to be tried. If the cervix is long, conical, and cartilaginous, and dilatation and packing have failed, free division from the internal to the external os, dilatation with a light instrument, and introduction of a stem pessary, to be worn from ten to fourteen days, are to be recommended.

DR. GEO. S. PECK, of Youngstown, O., read a paper on "Extra-uterine Pregnancy," and reported several interesting cases.

DR. EUGENE BOISE, of Grand Rapids, Mich., read a paper on "The Nature of Shock." He concluded that shock is not a paresis, either partial or general, of the vasomotor nerves, but a hyper-irritation of the entire sympathetic system. The skin is pale and livid, from contraction of the arterioles, in consequence of stimulation of their vasomotor nerves. The heart's action is rapid from stimulation of its sympathetic nerve-supply. There is scanty secretion of urine from contraction of the renal arteries as a result of stimulation of their nerve-supply. The skin, though pale and livid, is bathed in perspiration from stimulation of the secretory nerves of the glands. The pupils are dilated from stimulation of their sympathetic nerve-supply. The pulse at the wrist, while rapid and small, as would be expected in vasomotor stimulation, is soft and compressible in consequence of the scanty relaxation or dilatation of the heart. The condition of the heart may not have been actually demonstrated, but may justly be inferred by analogy—reasoning from the action of the uterus under similar conditions. Each contraction of the uterus is normally followed by a period of perfect relaxation. Over-irritation or stimulation of the uterine ganglia or sympathetic-nerve supply causes rapid contraction, with very imperfect relaxation. It is fair to infer the same condition in the heart under similar conditions. Thus, the supply of blood to the arteries is scanty and the blood-pressure is low. That the condition of the heart is one of stimulation rather than of paresis may be considered demonstrated by the fact that, in cases of sudden death from severe shock, the heart has been found contracted and empty. Admitting the correctness of this pathology, it follows that the treatment should be conducted on the line of sedation to the sympathetic system, as by amyl nitrite, nitro-glycerin, morphine, and the application of moist heat, *first*, to the surface; *second*, through the long tube in the colon; and *third*, by transfusion of a saline solution at a comparatively high temperature.

SECOND DAY—JUNE 2D.

DR. WALTER P. MARSTON, of Detroit, read a paper entitled "A Contribution to the Pathology of Surgical Diseases of the Gall-bladder."

DR. JAS. F. W. ROSS, of Toronto, followed with a paper on "A Few Practical Notes on the Establishment of Anastomosis Between the Gall-bladder and Intestine for Obstruction of the Common Duct, with the Relation of a Case of Obstruction of the Common Duct by a Small Growth."

The President, DR. L. S. MCMURTRY, delivered the Annual Address. His subject was "The Present Position of Pelvic Surgery." After a brief sketch of the history of ovariotomy, it was pointed out that from its beginning the department of pelvic surgery has been promoted and advanced by the labors of a few men. When the new surgery of the peritoneum was introduced, it was seized upon in a reckless way by the multitude, and for a time its very existence was threatened. The splendid results of the few who were trained for the work by a rigid apprenticeship were made the basis of operations by many wholly unprepared to carry out an exacting and difficult practice. Operations were undertaken upon inadequate and erroneous conceptions of pathologic conditions, and even, indeed, without any definite pathologic data whatever, until in many influential quarters the greatest discredit was thrown upon the work of able and conscientious men who were masters of pelvic pathology and pelvic surgery.

DR. ROSENWASSER, of Cleveland, Ohio, read a paper entitled "What are the Indications for Abdominal Section in Intra-pelvic Hemorrhage." He offered the following conclusions:

Intra-pelvic hemorrhage may be free into the peritoneal cavity, or primarily or secondarily circumscribed by true or false membranes. Though nearly always due to ruptured ectopic pregnancy, the same surgical principles underlying the treatment of other similar hemorrhages are applicable in intra-pelvic hemorrhage. Such treatment must, therefore, vary according to the conditions dependent on the hemorrhage, and, secondarily, on the original cause of the hemorrhage; hence to prevent free intra-pelvic hemorrhage, abdominal section is indicated in all cases of presumably recognized unruptured tubal pregnancy, either as prophylactic, or for the purpose of removing pathologic conditions not otherwise curable. In all cases of free intra-pelvic hemorrhage,

from whatever cause, early or immediate section is the only safe means of averting a fatal termination. In cases of circumscribed, intra-pelvic hemorrhage, section is indicated for the removal of increasing blood-clot and *débris*, whether due to recurrent bleeding or continued growth of a fetus; and whenever the symptoms indicate decomposition of the blood-clot. Lastly, section is also indicated whenever the pressure of the circumscribed blood-mass causes obstruction of the bowel.

DR. H. W. LONGYEAR, of Detroit, read a paper entitled "A Plea for Better Surgery in the Closure of the Abdominal Incision." From investigation and observation he has concluded that suppuration of the wound made in abdominal incision can occur with either method, but is much less liable to take place with the buried suture, if properly placed and sealed, than with the *en masse* suture, as, in the latter, pyogenic germs may enter the wound *via* the sutures or their sinuses. In fact, suppuration is often the result of the dragging in of germs attending the removal of the *en masse* suture.

Very thin or very fat walls lead to the development of hernia after abdominal incision, by preventing the accurate coaptation of the aponeuroses, which could only take place with the *en masse* suture, and would be prevented by the use of the buried method. The extra-peritoneal treatment of the stump in either case is bad and will some day be considered unsurgical, but if the fascia is brought closely around the stump and held there by the buried suture until it forms a solid firm ring around it, the viscera will be less liable to burst through it than if sutured but for nine or ten days, and afterward wedged apart, before firm cicatrization has had time to take place. When the aponeuroses form solid union with the buried suture no bandage will be required, as they are as strong as before incision. Imperfect closure is very much less liable to occur when the exact method of the buried suture is used, than with the "guess" method of the *en masse* stitch. In one it is known that the fascia is approximated, while in the other there is less certainty. Long incisions are always to be deprecated, but if healed by first intention after the use of the buried suture, hernia cannot occur, as by this method the chance of the interposition of other tissues between the apposed edges of the fascia is obviated. The straining of vomiting resulting from the nausea of prolonged anesthesia need not be feared when the buried suture is used, as the fascia cannot be separated by any such force when united with a strong suture. Too early rising is only to be feared after removal of sutures, and as the buried suture remains indefinitely to exert its restraining force, this cause has to do only with the *en masse* suture.

Drainage will be required with both methods of suture, but with the increasing tendency to use small tubes, the danger is becoming much less. Large gauze drains should be avoided on this account. The buried suture, however, properly protected from the drainage-opening by one *en masse* stitch, will usually insure solid union of the fascia close to the tube, and thus give the best result. Failure to take up the aponeurosis in the suture can only occur with the *en masse* stitch. Too early removal of sutures can only occur with the *en masse* stitch, and is obviated by using the buried suture. The use of soft catgut is permissible only when the safe tendon suture, or even silkworm-gut or silver wire, cannot be obtained.

If the patient becomes too fat, the cicatrix of the aponeurosis will not separate if reinforced with a strong tendon suture. Non-union of muscles is not likely to occur if their sheaths are properly approximated and held in place by the buried suture. If cut transversely, a fine tendon will insure their union. The use of the interrupted suture is easily obviated by simply using the buried animal suture in the closure of all abdominal incisions.

DR. C. A. L. REED, of Cincinnati, contributed a paper entitled "The Management of the Abdominal Incision."

He said that the occurrence of suppuration and of ventral hernia in the line of the abdominal incision pointed to some defect of technique or management. In preparation, it was recommended that, first, an application of oil be made, followed by ether, with some strong alkali; then cleansing with clear water, followed by the persistent application, for over half an hour preceding the operation, of a strong solution of mercuric chlorid. The incision should be made carefully in the median line through the linea alba, and the peritoneum should immediately be laid open smoothly with the knife. In closure it was recommended that an interrupted suture of silkworm-gut be passed from within outward on both sides entirely through the tissues, but so passed that it enters the wall of the peritoneum near the margin, dips deeply into the median tissue, and is brought out near the margin of the integument. The sutures should not be tied too tightly, and with the knot to one side of the incision. The wound should be dressed with aristol, boric acid, and a bandage carefully applied. When the sutures are removed a firmly-fitting adhesive strip should be applied that will not cause compression of the incision, with a consequent tendency to separate the internal margin.

THIRD DAY—JUNE 3D.

DR. JOHN C. SEXTON, of Rushville, Ind., contributed a paper upon "The Causation and Prevention of Central Laceration of the Perineum."

He pointed out the rarity of the accident, as a result of the many almost perfect methods of prevention. Among the deformities and irregularities of formation that tend to cause the accident are defective or abnormal development of the perineum or pubes and anomalies of the expellant forces and positions of the vertex. The use of chloroform to a degree suspending the action of the uterine muscles was advised against as dangerous. Resort to episiotomy was especially cautioned against. It was insisted that timely and skilful use of the forceps could prevent central laceration of the perineum.

DR. X. O. WERDER, of Pittsburg, contributed a paper entitled "Pregnancy following a Partial Supra-pubic Hysterectomy, Complicated by Hemorrhage through the Abdominal Cicatrix."

The interesting points of the case reported were:

The discharge of the menstrual flow through a small fistulous opening remaining after a partial supra-vaginal hysterectomy; and the occurrence of pregnancy eight or nine weeks after the operation in a woman previously sterile.

The pregnancy terminated at about term in the

delivery of a healthy, though poorly developed child, in spite of a firm and unyielding fixation of the uterus to the abdominal wall, and in spite of frequent and profuse hemorrhage from the placental site through the sinus opening in the lower angle of the abdominal cicatrix.

DR. GEORGE H. ROHÉ, of Catonsville, Md., read a paper entitled "Further Observations on the Relation of Pelvic Disease and Psychical Disturbances in Women." He gave the further history of eighteen cases reported last year in which the uterine appendages of insane women were removed for pelvic disease. Two additional cases have been operated upon. In both, the ovaries were cystic. Of these twenty cases, there was physical recovery from the operation, with improvement of the general health in eighteen; death in two; absolute mental recovery and discharge from the hospital in four; complete physical and partial mental recovery in three; decided mental improvement, but not sufficient to justify discharge from the hospital, in seven. In three the mental condition remained unchanged, but the physical condition was decidedly better. In one case the patient was removed from the hospital by friends a few weeks after operation and placed in another institution, where she is reported to be worse mentally. A case of melancholia with suicidal tendencies was also reported in which a badly-lacerated cervix was repaired, with complete and rapid mental recovery and discharge.

The following officers were elected:

President—Dr. George H. Rohé, of Catonsville, Md.; *First Vice-President*—Dr. Walter P. Manton, of Detroit, Mich.; *Second Vice-President*—Dr. George F. Hulbert, of St. Louis, Mo.; *Secretary*—Dr. William Warren Potter, of Buffalo, N. Y.; *Treasurer*—Dr. X. O. Werder, of Pittsburg, Pa.

It was decided to hold the next meeting at Toronto, Canada, at a date to be fixed on by the Executive Council.

AMERICAN MEDICAL ASSOCIATION.

Forty-fourth Annual Meeting, held at Milwaukee, Wis., June 6, 7, 8, and 9, 1893.

(*By Telegraph.*)

GENERAL SESSION.

FIRST DAY—JUNE 6TH.

THE Association met in the Academy of Music, and was called to order by the Chairman of the Committee of Arrangements, DR. U. O. B. WINGATE, of Milwaukee, at 11 A.M.

On the platform were Dr. H. O. Walker, of Detroit, First Vice-President; Mr. Ernest Hart, editor of the *British Medical Journal;* and Dr. Jesse Hawes, of Greeley, Colorado, Fourth Vice-President.

DR. WINGATE introduced his Excellency, GEORGE W. PECK, Governor of Wisconsin, who delivered an Address of Welcome. He said he was delegated by a million and a half of people of Wisconsin to bid the Association welcome, which he did with pleasure. Wisconsin is a State where there is no need for any one to be sick; where there is no need for cemeteries, except to bury people who came there from other States with diseases that Wisconsin had not had time to cure.

Then ex-Mayor P. J. SOMERS was introduced and welcomed the Association on behalf of the citizens of Milwaukee.

DR. WINGATE then presented the President, Dr. Hunter McGuire, of Richmond, Va., with a gavel with a silver handle, whose body was made of brick, as representative of the solidity of the institutions and industries of the city. Its color was cream, as representative of the Cream City of the Lakes, and its borders were studded with pearls taken from Wisconsin's rivers.

DR. MCGUIRE then delivered the President's Address (see p. 617).

On motion of DR. SCOTT, of Ohio, the President's Address was referred to a special committee to report on the suggestions contained in it.

PRESIDENT MCGUIRE then introduced MR. ERNEST HART, who made a few timely and appropriate remarks.

The next thing in order was the report of the Treasurer, Richard J. Dunglison, of Philadelphia. The report showed a balance in the Treasury of $5844.78, and was adopted.

The report of the Secretary was read by Dr. Atkinson and adopted.

THE PRESIDENT called for the report of the Rush Monument Committee, but Dr. George H. Rohé, of Catonsville, Md., a member of the committee, asked for further time, which was granted.

In the absence of the Chairman, Dr. Comegys, of Cincinnati, Secretary Atkinson then read the report of the Committee on Secretary of Public Health. The committee was given a full hearing by the Congressional committee. The Chairman of the Senate Committee, while willing to extend the powers of the existing quarantine office, did not think it possible to secure an appropriation for its establishment. The members of the House Committee favored such a department, but the session adjourned without action. The best course, the committee thought, was an appeal to President Cleveland that he recommend the matter to Congress in his next annual message.

DR. J. B. HAMILTON, of Chicago, moved, as a substitute that the report be adopted; that it be printed in the *Journal of the Association*, and that the committee be continued. The motion was seconded and carried.

The next thing in order was the report of the committee on Pan-American Medical Congress, which was read by Dr. Chas. A. L. Reed, of Cincinnati, Secretary-General of the Congress. The committee reported that every State in the Union, South America, and Hawaii would be represented, and that everything pointed to a successful meeting. On motion the report was adopted, and a vote of thanks was extended to the committee for its efficient work. The election of delegates to the Nominating Committee was then proceeded with.

SECOND DAY—JUNE 7TH.

An invitation was read inviting the Association to hold its next meeting at Asbury Park, N. J.

DR. H. A. HARE then delivered the Annual Address on General Medicine. His subject was "A Review of Some Practical Advances in Medicine and Therapeutics."

The paper wisely refrained from detailing specific results in laboratory research, as it did from enumerating typical cases and announcing the therapeutic effects of new remedies. It confined itself wholly to the presentation of certain broad facts illustrative of the present status of the non-surgical phases of advance in medicine. The increased scope, variety and accuracy of diagnostic examinations no longer leave the practitioner any excuse for empirical treatment of a disease "on general principles." Supposedly specific ailments are being recognized as merely symptoms of the real causative and, therefore, curable distemper. A particularly instructive example of such evolution in the art of symptomatic diagnosis was cited in the case of anemia, so called. Neither under the comprehensive title "impoverished condition of the blood," nor as the assumed result of disease in the "blood-making organs," has there been warrant for empirically dosing with iron till the patient's teeth were discolored or with arsenic till he felt as though his backbone were a crowbar; but when, with adequate microscopic devices, it became possible to count and measure the decrease and increase of the blood-corpuscles in number and size, then a basis for the test and proof of the value of arsenic in pernicious anemia and of iron in chlorosis was found.

The report of the Librarian, DR. GEORGE W. WEBSTER, of Chicago, was then read by the Secretary. He recommended that the proposition from the Newberry (Chicago) Library be accepted without condition, and that the Librarian, with the Board of Trustees, be instructed to effect the permanent deposit of the Association's valuable collection, now in the Smithsonian Institution at Washington, in the new Chicago institution, there to be carefully bound, catalogued, and stored as the property of the Association, accessible, however, to the entire profession. The report was unanimously adopted.

The report of the Board of Trustees was then read by the Secretary. The Board, among other things, recommended that no advertisements appear in the *Journal* unless the formulæ have been previously submitted.

The Report of the Committee on Revision of the Constitution and Code was then read by the Chairman, DR. HENRY D. HOLTON. This report has already been made public so far as relates to the Constitution. As regards the Code the Committee recommended the following:

1. We would omit all sections of the Code that describe the obligations of patients to their physicians and of the public to physicians. The reason for this suggestion is that the Code is not designated either for patients or the public, and so the sections are superfluous.

2. We suggest the placing in the same class with the copyrighting of medical books and other similar works the patenting of all mechanical appliances used in medicine or surgery. The Code says nothing respecting the copyrighting of medical publications, and we find no good reason why it should say anything respecting the patenting of mechanical devices.

3. We recommend the more accurate definition of the term "consultation," as we find good reason to believe that serious estrangement has arisen between physicians because of the different ideas attached to this term. The existing Code of Ethics of the American Medical Association defines a consultation substantially as a meeting of doctors to discuss a case, to the end that they may equally share in its further management. By the same authority a consultation is not a meeting of physicians in a case, in which one gets all the facts possible from the other or others as a preliminary to assuming entire responsibility in its future conduct.

From these data it is clear that usually the specialist does not consult the general practitioner. He simply obtains all the facts the general practitioner possesses, preparatory to assuming full control of the case.

There are many other occasions for the meeting of medical men in connection with cases of sickness that are in no sense consultations according to the existing Code. Hence, we think that in the interest of scientific accuracy there should be a discrimination made in the matter of consultations, as present conditions differ widely from those of forty or more years ago.

Having premised this much, your Committee recommends the alteration of Article IV, Sec. 1, page 11, Code of Ethics, to read as follows: "A thorough medical education furnishes the only presumptive evidence of professional abilities and requirements, and ought to be the only acknowledged right of an individual to the exercise and honors of his profession. Nevertheless, as the good of the patient is the sole object in view, and this is often dependent upon personal confidence, no intelligent practitioner who has a license to practise from some medical board of known renown and acknowledged legal authority to issue such license, and who is in good moral and professional standing in the place in which he resides, should be refused consultation when it is requested by the patient."

4. It is suggested that it would be wise to re-write the Code in phraseology so plain as to make it a practical, common-sense document for daily guidance in the performance of our various duties, and an aid in meeting responsibilities incident to our professional life.

Finally, your Committee found that in but few medical colleges has this document been taught, and never as a portion of the required curriculum.

It is believed that professional success of the best sort depends as well upon a practical knowledge of medical manners and medical ethics as upon a knowledge of anatomy, physiology, pathology, therapeutics, and surgery. To be master of the rules of conduct by which our neighboring doctors can be made and kept our friends, so that the people may see that the medical men who serve them can form a band of brothers devoted to the service of suffering humanity, is to possess a most desirable professional resource.

DR. DIDAMA read a minority report, which recommended leaving the present methods of representation, nomination, Constitution, and the Code as they now stand.

The majority report was adopted, the Committee continued, and the suggested amendments, according to the Constitution, were laid over for one year.

DR. ROBERTS, of Philadelphia, protested against the construction of the Constitution by the President, requiring the action on Code revision to be postponed until the next annual meeting.

DR. N. S. DAVIS reported on behalf of the committee to confer with committees from the two State bodies of

New York, that in view of the action of these Societies, it would be unwise for the Association to enter into any such conference.

SECTION ON SURGERY AND ANATOMY.

FIRST DAY—JUNE 6TH.

The meeting was called to order by the President, DR. JAS. T. JELKS, of Hot Springs, Ark., who read an address entitled "Antiquity of Syphilis, and Moses as a Health-officer." Dr. Jelks analyzed certain of the plagues described in the Old Testament, and showed the great analogy that exists between these descriptions and syphilis as known to-day. He dwelt particularly upon the plague that afflicted Pharoah and his household to strengthen this relationship. The narration of David's affliction was also recalled as another instance giving color to the theory of the syphilitic nature of some of the plagues of old.

DR. A. J. OCHSNER, of Chicago, Ills., read a paper on "A Report of Three Cases of Acute Intestinal Obstruction Treated by Laparotomy: 1. Intussusception; 2. Volvulus; 3. Meckel's diverticulum."

The first case was that of a boy, aged three years, who, a week before coming under observation, fell and immediately felt slight pain in the cecal region, of but brief duration. Occasional pains were experienced during the next few days. At the end of a week severe spasmodic pains were felt in the abdomen, with nausea, vomiting, and a constant desire, with ineffectual efforts, to evacuate the bowels. Intussusception was diagnosticated, and the diagnosis confirmed by celiotomy. The vermiform appendix seemed to have been thrown around the ileum, the constriction thus produced leading to the intussusception. The appendix was removed after reduction had been effected. On the fifth day the bowels were moved by a glycerin-and-water enema. The stitches were removed on the ninth day, and the wound supported with adhesive strips. The pulse and temperature were but slightly affected, and recovery was rapid and complete.

The second case occurred in a man thirty-two years of age, who fell into a ditch two or three feet deep, experiencing slight pain in the left inguinal region. Two days later the abdomen became swollen and painful, and there were nausea and constipation. A globular enlargement could be seen in the lower part of the abdomen. Purgatives had been administered for two days without effect, except to increase the pain. Volvulus was suspected, and an operation for its relief undertaken. On opening the abdomen the suspicion was confirmed. The sigmoid flexure was found so distended that replacement within the peritoneal cavity was impossible. A rectal tube was passed, liberating a large amount of gas, after which the bowel could easily be replaced. After the fifth day the bowels were moved daily by enemata. Complete recovery followed without incident, the patient being dismissed thirty days after operation.

The third case occurred in a man, aged eighty-one years, who, while in apparent health, suddenly developed the symptoms of acute shock. There was sudden severe pain to the right of the umbilicus, which was thought to be due to the presence of gall-stones. An anodyne gave relief for two days. Then the abdomen became uniformly distended. There were nausea and vomiting, first of the stomach-contents, and later of stercoraceous matter. There was no point of special tenderness. An operation was undertaken, and a loop of small intestine was found to have slipped through Meckel's diverticulum. The adhesions were so firm that it was necessary to apply double ligatures and cut between them, so that the condition must have been one of long standing. After the operation, uncontrollable vomiting continued, and death occurred thirteen hours later without reaction having taken place. Regret was expressed that the stomach was not washed out, as this might have relieved the vomiting. Earlier diagnosis and a younger age would both greatly have increased the chance of recovery.

DR. MARCY, of Boston, emphasized the value of washing out the stomach in cases complicated with protracted vomiting.

DR. JOHN B. ROBERTS, of Philadelphia, followed with a paper on "Unnecessary Restrictions in Surgery." He made a strong plea for the treatment of every surgical case on its merits, rather than by rule. The opinion was expressed that many patients are detained in bed unnecessarily long on account of fractures of the bones of the legs, and that patients with fractures of the forearm are often likewise burdened with cumbersome dressings long after the usefulness of these had ceased to exist. Sprains and chronic joint-affections often demand massage and passive motion, rather than continued rest. It was held that the habit of restricting the diet of patients for days after an operation is unnecessary, as well as a large number of other customs that have been taught and practised for so many years that almost no one stops to consider whether they are rational or not.

DR. JOHN E. LINK, of Terre Haute, presented reports of a number of cases affording evidence of the surgical immunity of the peritoneal viscera. He gave the results of many operations performed in the most careless manner on dogs, and always with the recovery of the animal. The object was to show that when skilled surgical aid cannot be obtained the family physician should proceed to operate in cases of abdominal injuries or other serious acute conditions, inasmuch as the peritoneum is much more tolerant of invasion than has been generally supposed, and the danger of delay in operating far outweighs that to be feared from opening the abdomen. Dr. Link demonstrated his method of operating on dogs, and showed several specimens taken from animals previously operated upon.

In the discussion considerable difference of opinion was expressed as to the exact value of operations on animals in judging of the possibilities in the human subject.

SECOND DAY—JUNE 7TH.

DR. CHRISTIAN FENGER, of Chicago, described an "Operation for Stricture of the Ureter in Hydronephrosis and Pyonephrosis." He pointed out that in hydronephrosis or pyonephrosis there must be an obstruction somewhere. In many cases of intermittent discharge the difficulty is due to oblique insertion of the ureter into the pelvis, and the consequent formation of a valve at the point of junction. The fluid is prevented from passing

until the distention and pressure are sufficiently great to overcome the obstruction, and the accumulation escapes. Dr. Fenger has operated on such a case by splitting the valve and stitching its margins apart after opening the pelvis. Strictures of the ureter also cause hydronephrosis or pyonephrosis. They may result from ureteritis or from indirect traumatism. A case was reported in which pyonephrosis developed two years after a fall. An operation was performed, the stricture divided longitudinally, and stitches passed in the same direction as the line of the incision, thus converting the longitudinal into a transverse wound. The appearance of blood in the urine for a few days demonstrated the patulousness of the ureter. Recovery was complete. The best incision for this operation is the lumbar one, from the twelfth rib to the crest of the ilium, and then extended to the middle of Poupart's ligament. This gives ready access to the upper two-thirds of the ureter. The lower third can be reached by sacral resection. The value of relieving obstruction to the ureter is shown by the fact that after nephrotomy a fistula remains in 45 per cent. of the cases; while nephrectomy is to be avoided if possible, as the condition of the opposite kidney is generally not known, and the radical operation may result in speedy death from uremia if the second kidney is also diseased.

DR. J. B. MURPHY, of Chicago, read a paper entitled "What Operations May We Perform on the Gall-bladder?" It was contended that the function of the gall-bladder is to regulate the pressure in the bile-ducts, as the air-chamber does in the steam pump. In support of this view reference was made to the fact that the bile is always much more concentrated in the gall-bladder than in any of the ducts, and also that in a very large number of operations upon the living subject, the cadaver, and upon animals, the gall-bladder was never found empty in health. The pathologic conditions of the gall-bladder calling for operative interference are chiefly cholelithiasis, cholecystitis, carcinoma of the head of the pancreas, neoplasms involving the ducts, carcinoma of the gall-bladder, and trauma. The operations, naturally, all necessitate celiotomy. Of twenty-five cases of simple puncture collected, one-fourth terminated fatally. This is to be explained by the fact that the walls of the gall-bladder are so dense and so slightly contractile that the puncture-opening remains patulous, and thus allows the contents to continue to escape. In twenty-three cases in which an incision was made and drainage provided for, the mortality was eighteen per cent. Dr. Murphy has had made a modification of his anastomosis-button, in which one part is two and a half or three inches in length, and, being hollow, allows the bile to escape entirely externally to the peritoneal cavity, so that it is impossible for any leak to occur. In fifty-nine cases collected, in which cholecystotomy was performed in two sittings, the death-rate was but ten per cent.—a very favorable showing. The same operation performed at one sitting, as advocated and practised by Tait, is a much more serious procedure. Of 201 cases operated on by this method twenty-five per cent. died, and in many others a sinus persisted. Incision with immediate suture —ideal cholecystotomy—has been practised a number of times. In thirty cases collected there were six deaths—a mortality of twenty per cent. Dr. Murphy advises joining the gall-bladder with the intestine (cholecystoenterostomy) in all cases in which it is necessary to perform cholecystotomy. This permits of complete closure of the abdominal incision, and digestion is not impaired by the escape of bile externally. Nussbaum was probably the first to employ this procedure, but on account of the great difficulty in effecting the anastomosis, the operation was gradually abandoned. By means of the anastomosis-buttons designed by Dr. Murphy, the operation becomes a simple one that can be quickly performed. Eleven cases have been collected. Seven have been operated on by Dr. Murphy himself; recovery taking place in all. Two other operations mentioned were also successful. The method was demonstrated by an operation on a living dog.

DR. M. E. CONNELL, of Wauwatosa, Wis., read a paper upon "Intestinal Anastomosis by an Improved Method, Without Plates and With Two Knots; Either Silk or Catgut May be Used." Specimens were exhibited and the operation explained by reference to diagrams. End-to-end approximation or lateral apposition may be practised, the latter being the simpler. The operation is performed as follows: After making the necessary incisions, a suspending loop is inserted in the bowel just beyond the ends of the cuts, and held by an assistant. A suture, three feet long, is made to transfix all of the coats of one margin of the wound, and passed in the opposite direction through all the coats at a corresponding point on the other end of the bowel. This is repeated until the whole length of one side of the wound has been traversed, always leaving a loop of an inch or two.

Then, by turning the bowel over, the other margin of the wound is closed by passing stitches in the same manner; but this time, drawing them taut, so as to close the wound. This having been completed, the two ends of the first suture are pulled upon, and, after the apposition is accurate and firm, a knot is tied in each end. After the second knot has been tied, both ends are cut close.

DR. E. WYLLYS ANDREWS, of Chicago, stated that he had recently used Dr. Murphy's buttons in a case of strangulated femoral hernia in which it was necessary to resect fifteen inches of gangrenous intestine. He made an end-to-end approximation. The subsequent course of the case was entirely favorable, and recovery was prompt and satisfactory.

DR. H. O. WALKER, of Detroit, referred to the short time required to perform anastomosis by Murphy's method, and believed this one of the strongest arguments in its favor.

DR. BAYARD HOLMES, of Chicago, reported "A Case of Chronic Glanders, with Recovery." It was pointed out that glanders in man is of two kinds: (1) acute, in which death usually occurs in three or four months, and (2) chronic, in which the patient may recover after three or four years. In the case reported the patient was a farmer, twenty-two years old, who had always enjoyed good health. In December, 1889, one of his horses became stiff, had a discharge from the nose, and died in a week. The mate to this horse also became sick, and had numerous pustules over the body. In a short time the patient noticed a sore on one of his fingers. The affection was thought to be a carbuncle. In a short

time five foci of the disease appeared in different portions of the body. There was at first sharp, burning pain, like that which follows the sting of an insect, and deep swelling. At three points spontaneous opening took place. When the patient came under observation it was decided to remove the disease radically by the cautery instead of the knife. The diseased area was scraped thoroughly, the surface brushed with a strong solution of zinc chlorid and packed with iodoform-gauze dipped in a concentrated solution of potassium iodid. In all, fourteen different lesions appeared, requiring twenty different operations. Adenitis occurred but once. The diagnosis was confirmed by inoculation of animals.

DR. ERNEST LAPLACE, of Philadelphia, read a paper on "A New Operation for Varicose Veins," which consists in ligating the long saphenous vein at the saphenous opening, and the short saphenous vein between the two heads of the gastrocnemius. The after-treatment consists of rest in bed, elevation of the limb, and careful wrapping in cotton. The patient may be allowed to arise in two or three weeks. Seventeen cases were reported, in six of which the operation was bilateral. All did well, and the ten recently heard from remain free from their trouble. Cocaine anesthesia was used.

The Nominating Committee reported the following: For President, Dr. John B. Roberts, of Philadelphia; Vice-President, Dr. J. D. Griffith, of Kansas City; Secretary, Dr. Floyd McRae, of Atlanta, Ga.

DR. R. MERRILL RICKETTS, of Cincinnati, O., showed "specimens demonstrating the operation of gastro-colotomy, end-to-end anastomosis of gut, and the connecting of the gall-bladder and the alimentary tract, as performed with the Murphy button and by the Mansell operation." From experiments on animals the conclusion is reached that the Mansell operation is one of the best methods thus far described. It may be rapidly performed, and meets all of the requirements.

DR. THOMAS H. MANLEY, of New York, read a paper entitled "A Few Notes on Tibio-tarsal, Tarsal, Medio-tarsal, Tarso-metatarsal, Phalangeal, Traumatic, and Artificial Amputations in the Lower Extremities; Substitutes for Parts Lost in this Situation." A plea was made for more conservative surgery in cases of traumatism of the lower limb. The rule was laid down never to perform an immediate primary operation. Not a particle of tissue should be sacrificed that will survive; a secondary operation is to be preferred, if the patient so desires, for the cosmetic effect or the greater usefulness of the member.

DR. QUIMBY, of Jersey City, coincided with the recommendation to save all tissue possible. He referred to a modification of Pirogoff's amputation, that he introduced in 1877, in which he does not resect the ends of the tibia and fibula, but places the sawed surface of the os calcis against the articular surfaces of the tibia and fibula. This is of great importance in children, as the epiphysis is thus spared, and the growth of the bone, therefore, not interfered with.

DR. MACLEAN, of Detroit, pointed out that mere removal of the articular cartilage would not interfere with the epiphysis. He still adheres to Syme's operation as the best in this situation, especially when the operation is performed for disease. If it is necessary to operate above the ankle the point of election is to be preferred.

DR. SUMMERS, of Wisconsin, indorsed the procedure recommended by Dr. Quimby, and asserted that a recent (traumatic) surface united better to a serous surface than to another recent (traumatic) surface.

DR. JOSEPH HOFFMAN read a paper on "Appendicitis: What It is and What It is Not, from a Surgical Standpoint." He said that it is now settled that the appendix is situated in the peritoneal cavity, and therefore all inflammations of the process are intra-peritoneal. The anatomic relations of the appendix are such that a considerable degree of mobility is permitted, and the symptoms of appendicitis therefore vary in different cases. The presence of pus is always an indication for operation without delay. In recurring attacks, operation in the quiescent period is to be considered.

DR. MURPHY, of Chicago, advocated the removal of the appendix in every case as soon as the diagnosis is made. He has operated 95 times for removal of the appendix, with 7 deaths, 5 from general peritonitis, which had been present before the operation, and 2 from pyemia.

DR. SENN cautioned against operating without careful consideration, as the operation may present considerable difficulty. In recurrent attacks, however, removal of the process is to be recommended.

DR. RANSOHOFF, of Cincinnati, Ohio, read a paper on "The Extirpation of Aneurisms," based on two cases thus treated. One was a case of bronchial aneurism; the other a case of anterior tibial aneurism. In each case an incision was made over the tumor; the vessel traced in both directions; two ligatures applied, both above and below; the artery cut between; and the tumor enucleated. The following propositions were submitted: (1) extirpation is the ideal operation; (2) in aneurisms of the forearm and leg no other method should be employed; (3) in aneurisms that suddenly enlarge, and when rupture seems imminent, extirpation should be employed; (4) in recent traumatic aneurisms, the vessel should be ligated above and below, and if a sac has formed, this should be removed; (5) after other methods have failed, extirpation should be employed; (6) arterio-venous aneurisms should be subjected to the same treatment; (7) proximal ligation may be performed when the age of the patient, the location, or other causes contra-indicate extirpation.

DR. JOHN A. WYETH, of New York, described "An Operation for Anterior Cleft Palate in Infants and Older Children." The method advised is first to drill two holes in the hard palate; pare the mucous membrane from the margins of the cleft, and, with strong scissors or with delicate bone-forceps, divide the alveolus on the short side at about its middle, and slide the anterior fragment forward and wire in this position. This closes the anterior part of the cleft. The lip may be operated on at the same time, or subsequently, as seems best.

SECTION ON PRACTICE OF MEDICINE.

FIRST DAY—JUNE 6TH.

The section was called to order by Dr. CHARLES G. STOCKTON, of Buffalo, who delivered the Chairman's Address. His subject was "A Review of Ulcerative Endocarditis." He referred to the fact that a few years

ago endocarditis was considered a simple inflammation of the lining membrane of the heart. After Osler's lectures, in 1885, it became clear that the disease was sometimes infectious, and endocarditis was spoken of as acute, chronic, and malignant, and ulcerative. In relation to rheumatism reference was made to the chemical theory of Prout and the nervous theory of Mitchell, but the disposition was manifested to accept the germ-theory as being more rational. From the known facts it was concluded that endocarditis may, under favorable conditions, arise from any one of a multiplicity of special causes, and that its course may be as variable as the causes are dissimilar. Of the two classes, malignant and non-malignant, the paper dealt with the former. Ulcerative endocarditis depends upon the presence of a microörganism that generally attacks the endocardium as the result of some preceding affection. Some forms of microörganisms have the apparent faculty of inducing endocarditis in the healthy organism, and are regarded as special to this form of disease. Weichselbaum has discovered four such organisms; Fraenkel and Saenger have described one, and Lion and Girode still another. The bacillus coli communis has in some cases been the active agent in the development of this disease. A case has been reported by Dr. W. T. Howard, Jr., in the *Johns Hopkins Hospital Bulletin* for April, 1893, in which malignant endocarditis was found to depend upon a bacillus having morphologically and culturally the characteristics of the bacillus of diphtheria, although the patient presented no history of having had diphtheria. Different microörganisms produce different pathologic chemical results. Some organisms invade the mitral and some the aortic valve by preference. Careful observations show that the main valves are first invaded. According to Saenger the valves in a pathologic state contain vessels in which colonies of bacteria are found, so that the process may be primarily intra-valvular; but in many cases the disease appears upon the free surface of the valves.

In Taylor's series, in 11 of 53 cases of endocarditis, the lesion occurred on the right side. Lion suggests that aërobic bacteria grow best in the arterial blood of the left side, and anaërobic in the carbonized blood of the right heart. The opinion was expressed that cases of malignant endocarditis recover, and that it is a mistake to apply the term simple endocarditis to all cases that have a favorable termination.

DR. J. G. TRUAX, of New York City, said that he had seen some 13 cases of ulcerative endocarditis, all of which were fatal. He thought that the condition is almost invariably complicated with some other disease; most of his cases had articular rheumatism. In two-thirds of his cases a mistake in diagnosis was made, the true condition being revealed by the autopsy.

DR. H. D. DIDAMA, of Syracuse, N. Y., referred to the experiments of Richardson, who produced not only articular rheumatism but also endocarditis by injections of lactic acid. He thought the fact that the disease occurred five times as often on the left side of the heart as on the right might be explained by the infection taking place by the air-passages. He thought that many of the microörganisms found in connection with endocarditis do not fulfil Koch's condition, that a specific organism must be found in that particular disease and in no other, and that cultures must be identical and inoculation produce the same disease.

DR. H. J. HERRICK, of Cleveland, Ohio, thought endocarditis a secondary form of disease. He also thought that if the blood is in perfect condition there could be no endocarditis, and that treatment should be directed to the predisposing cause.

DR. W. H. WASHBURN, of Milwaukee, read a paper entitled "Some Considerations Bearing on the Treatment of Pneumonia." He took the position that the death-rate of pneumonia is gradually on the increase in this country under the present methods of treatment, which are mainly expectant in nature. As long as we are unable to destroy the *materies morbi* of pneumonia, all efforts at treatment can at the best be but palliative. Efforts must be directed toward maintaining the functions of the nervous system. Support of the nervous system and elimination of the specific poisons of the disease and the products of retrograde metamorphosis are the indications for treatment. Alcohol is to be regarded not as a stimulant but as a sedative. It was held that its use in the treatment of pneumonia is illogical and responsible for the high mortality. Strychnine is preferable, as it heightens the sensibility of the nervous system, and is a stimulant to the respiratory center, the cardiac ganglia, the nerves of special sense, and involuntary muscular tissue.

DR. R. R. ROSS, of Buffalo, N.Y., said that before pneumonia could be treated scientifically it must be divided into classes referable to the heart, the poison of the disease, and the lungs, each presenting different symptoms and requiring different remedies. He had seen nitro-glycerin used in a large number of cases, with most excellent results.

DR. JENKS, of Keokuk, Iowa, thought that one reason for the increased mortality, shown by statistics, is that fifty years ago physicians knew nothing of auscultation and percussion, and many cases of fatal pneumonia were called by other names, especially in the aged and children. He believed in treating the disease by drugs and not by expectancy. Calomel should have a place in the treatment of pneumonia. When the pulse keeps up, nothing has proved so useful as nitro-glycerin, given every two or three hours in conjunction with strychnine and digitalis. This combination may be relied upon in the last stage of the disease.

DR. REYBURN, of Washington, did not think bleeding unphilosophic in strong, robust persons, suddenly attacked with pneumonia. He advocated the use of aconite and veratrum viride. Another class of patients should be treated with strychnine, digitalis, the salts of ammonium, and alcohol. He thought that pneumonia was treated more successfully thirty years ago than it is now.

DR. BABCOCK held that pneumonia is more fatal now than thirty years ago. He used quinine, in addition to other treatment. He advocated the use of alcohol, which he considered both a stimulant and a sedative. He had seen good results from the use of flaxseed-meal poultices.

DR. W. E. QUINE, of Chicago, said that it was not the pneumonia that was to be treated, but the individual. In some cases the treatment should be vigorously supportive, in others sedative. Veratrum viride would do good in the early stages.

DR. MARTINE, of New York, believed that pneumonia could be cured by keeping the pulse-rate down to about 80; he had not had a fatal case.

In closing the discussion, DR. NORTH favored the use of alcohol in the first stage. He had never practised venesection, although he had carried a lancet for that purpose for twenty-five years.

DR. ROBERT H. BABCOCK, of Chicago, presented a paper upon "The Medical Aspects of Empyema Following or Complicating Croupous Pneumonia." He believes that owing to its insidious onset, purulent pleurisy is frequently overlooked. He would especially call attention, as supporting this belief, to the vague and general manner in which the disease is treated by most of the text-books. It is only within a recent period that the progress in bacteriologic research has given the profession a more positive knowledge of this interesting and important condition. In every instance empyema is dependent upon the presence of cocci acting when there has been a previous injury of the serous membrane, or a pre-existing serous effusion. The microörganisms may be of various kinds, as, for instance, the pneumonia-coccus or the bacillus tuberculosis. Frequently, the disease is secondary to some preëxisting affection, especially croupous pneumonia and influenza. If due to the presence of the pneumonia-coccus there is a great tendency to spontaneous evacuation through the bronchi. Four types of empyema may be recognized: (1) Meta-pneumonic empyema, either independent of or in association with croupous pneumonia; (2) a pyemic form, secondary to some local inflammation or constitutional infection; (3) a tuberculous, and (4) a gangrenous form. The existence of empyema may be definitely diagnosticated by the use of the aspirating needle. The prognosis in the form due to the pneumonia-coccus is good, cases usually yielding to simple puncture and drainage. That of the other forms is more grave. These require more active surgical intervention.

DR. W. A. BATCHELLOR, of Milwaukee, has always believed that the treatment of empyema should consist in incision and drainage, but he was inclined, like Dr. Babcock, to view the subject from a bacteriologic standpoint. He thought that many cases could be cured by aspiration and that bacteriologic investigation of pleurisy would lead to better means of treatment.

DR. MARTINE, of New York, thought that reduction in the pulse-rate in cases of pleurisy would prevent empyema.

DR. GEORGE W. WEBSTER, of Chicago, stated that in the last sixteen months he had treated seven cases of empyema in persons ranging in age from three to forty years, by washing out the pleural cavity with a saturated solution of boric acid. All recovered.

SECOND DAY—JUNE 7TH.

DR. J. M. ANDERS, of Philadelphia, read a paper entitled "Points in the Clinical History of Erysipelas," in which he called attention to the influence of the various seasons of the year upon that disease. From a careful study of a large number of cases collected from hospital and private practice, it has been found that the largest number of cases occur in April, and that from April to August there is a gradual decrease in the number, the latter month giving the minimum record. The period of life at which the disease is most common is not yet positively determined, though it is believed to be more frequent in the young. More than one-half of the cases collected occurred under thirty years of age, and these were largely between the ages of twenty and thirty. Of 1787 cases, 1239 were males and 548 females. Slight wounds and contusions of the face and head are exceedingly common as starting-points of the disease. In only 7.8 per cent. was the affection secondary to chronic disease. Individual predisposition was noted in but a small proportion of cases, and family predisposition in a still smaller proportion. The average duration of the affection in over 1000 cases was twenty-five and one-tenth days; if the individual was in an enfeebled condition the duration was longer. In persons under forty years of age the average duration was but fourteen days. Erysipelas is a self-limited disease, the age influencing its duration. Relapses occurred in about 10 per cent. of cases; single relapses are frequently observed in young and healthy subjects, while multiple relapses are most frequently noted in weakly individuals.

DR. HARE, of Philadelphia, dwelt upon the danger of misleading averages. If the ages of the individuals are added and the result divided by the number of patients, the average obtained will frequently be quite different from that obtained by observing the age at which the disease is most common. Erysipelas is quite frequent in cases of pronounced nasal and buccal lesions; in typhoid fever, for instance, such lesions affording entrance to the specific organisms of erysipelas, viz., the streptococcus pyogenes. Its greater frequency in males is to be explained by the greater exposure to traumatism.

DR. MAX EINHORN, of New York City, read a paper upon and gave a demonstration of gastrodiaphany. He pointed out the difficulty of making a correct diagnosis of abdominal disease, especially in the case of the stomach, the organ most frequently diseased. His apparatus consists of a soft rubber tube, to which is attached an Edison lamp. It can be introduced into the stomach with no more difficulty than is required in introducing the ordinary stomach-tube. The patient must be in a fasting condition, and immediately before the passage of the tube, should be given one or two glasses of water. The translucent field will show the size of the stomach; whether it is contracted or dilated; the presence of tumors or indurations of the stomach-walls is indicated by the absence of translucency. Two patients were shown and the workings of the apparatus demonstrated.

DR. AULDE, of Philadelphia, spoke of the value of translumination in the young in the diagnosis of laryngeal disease, and thought that it might be of value in gynecic and rectal disease and abdominal surgery in assisting in diagnosis.

DR. EINHORN said, in conclusion, that the possibility of breakage of the lamp is about *nil*. The covering is made of hard glass, and no such accident has been noted. The water is given for the purpose of distending the gastric walls, which normally are in contact. Were the water not given, the light would shine through the one spot in contact with the lamp. In the case of the rectum and the colon little would be learned unless the bowel were distended with water, and then the result

would still be unsatisfactory on account of the deep location of these structures.

DR. JOS. EICHBERG, of Cincinnati, read a paper entitled "A Case of Sunstroke, with Considerations of its Treatment." He said that the true pathology of sunstroke has not yet been determined, although it is known that there occurs a disturbance of the heat-regulating center. An initial high temperature does not preclude the possibility of complete recovery. The prognosis is largely influenced by the degree of cerebral activity. The treatment consists in the reduction of the temperature by external applications of cold, and the administration of digitalis or the hypodermatic injection of digitalin to stimulate the heart-muscle.

It is best to give a hypodermatic injection before placing the patient in the bath. The great danger of the condition is weakness of the heart-muscle, as shown by the livid skin, pulmonary congestion, flabby right heart and dilated veins. This weakness is due to a chemical change in the heart-muscle and in the muscular tissue of the vessels, and is brought about in an incredibly short time. As the temperature of the blood rises the organs respond, and especially the highly specialized brain, which shows the reaction in the form of convulsions and coma. By applying cold to the surface the blood is cooled, and this running to the right heart abstracts heat from the circulation there, thus tending to lessen the danger. The therapeutic effect of digitalis in lowering temperature is due probably to a lessening of the heat-production by its action on the heat-center. Death is the direct result of a lesion of the sympathetic system. The habitual use of malt liquor is of considerable influence in predisposing to an attack, because of the formation of fat in the tissues, and especially around the heart, thus giving rise to a weak organ. In such cases the external application of cold is much less efficacious because of the fatty envelop around the heart. Time is an important factor in the treatment, a delay of a few minutes often resulting in death.

Dr. R. R. ROSS, of Buffalo, read a paper on "The Treatment of Insolation." He confined his remarks to sunstroke, and did not dwell on all that is conveyed by the term thermic fever. High degrees of temperature may be borne if the air be dry, hence sunstroke is rare in dry hot countries. Those who have clean skins and a good vasomotor system are less prone to sunstroke. H. C. Wood speaks of a peculiar odor emanating from the patient and present in the feces. Putrefactive changes occur very promptly after sunstroke. The prophylaxis consists in cleanliness and the avoidance of mental and physical exhaustion.

Antiseptics are not only useless, but absolutely dangerous; they may produce heart-failure and exert a destructive influence upon the blood corpuscles. To reduce the temperature of the body is important, but the manner in which this is done is also important. It is radically wrong to pack the patient in ice, on account of the secondary depressing effect or shock that results. The bloodvessels are contracted, and only a small amount of blood comes in contact with the cold. The temperature of the bath should be 45° or 50°, and the patient should be immersed for two or three minutes, the head being cooled as rapidly as the body. Then the skin must be rubbed with a coarse towel, and the process repeated. Atropine, sulphuric ether, camphor and strychnine are used according to circumstances. The temperature will fall one degree every ten or fifteen minutes. The diet of convalescents should be liquid and farinaceous, and include nothing that will produce heat. Salines are of value.

DR. HARE, of Philadelphia, expressed doubt that the danger in sunstroke is due to combustion. He believes that it is due to the change that takes place in the nervous system. He emphasized the fact that friction of the surface must be practised to bring the heated blood to the surface, so that it may be cooled. H. C. Wood has shown that immediately after death the heart is in a condition of complete systole, and only dilates some time after death. It was objected to that so much importance is attached to the sympathetic system, as it is perhaps not so seriously involved as is supposed.

DR. ROSS expressed the belief that the cases attended with unpleasant sequelæ are those that have been exposed to the high temperature for a long time—from five to ten hours.

DR. N. S. DAVIS, JR., of Chicago, read a paper entitled "Some Remarks on Diabetes," Clemens's solution was advised in treatment, except in the more advanced cases. The dose should be increased to toleration, unless the desired therapeutic effect is obtained before. Doses of six or eight minims are usually sufficiently large. Strychnine arseniate has also proved efficacious. Pancreatic extracts have also been tried, but have generally been found of doubtful value.

DR. DIDAMA alluded to the difficulty of determining which cases are of pancreatic origin, and cited one in which treatment with pancreatic extract had been useless.

DR. JAMES W. PUTNAM, of Buffalo, read an excellent article on "Headache." He first considered the part played by heredity in a given case of headache, and secondly the personal history as regards syphilis, dyspepsia, etc. Then the history of the headache should receive consideration, when, and under what circumstances it came on, etc. The character of the headache itself is then to be observed, its periodicity, location, and characteristics. The peculiarities of the two great classes of headache, the anemic and the congestive, were then discussed, together with the methods of treatment. Syphilitic headache is easy of diagnosis and treatment. Reflex headache from eye-strain is common, but oculists often fail to afford relief, owing to imperfect correction of the ocular defects. The treatment of chronic cases must be continued by the oculist after the refractive error has been corrected. In almost all cases of headache, whatever the cause, relief or cure is possible if the case be carefully studied.

DR. WHITTAKER, of Cincinnati, thought eye-strain an overrated factor. Instances of failure to cure are often due to faulty urinalysis. Gonorrhea is often attended with headache.

DR. E. T. FERGUSON, of Troy, N. Y., contributed "An Additional Note on the Treatment of Exophthalmic Goiter." Fifteen or twenty cases that had come under observation since his previous report had improved under treatment with strophanthus, and there had been no relapses. The dosage varies in different cases. The initial dose is eight or ten drops, three

times daily, which may be increased until the desired effect is produced.

DR. HARE, of Philadelphia, alluded to the variation in the type of the affection. He had never found strophanthus to act well, but sometimes to cause severe diarrhea.

DR. ANDERS, of Philadelphia, stated that, used alone, strophanthus does not give good results; but, when arhythmia exists, a combination of strophanthus and digitalis regulates the action of the heart better than either drug alone.

DR. PINE, of Chicago, thought tachycardia often the first stage of Graves's disease.

DR. CHARLES DENISON, of Denver, read a paper entitled "The Mutual Interest of the Medical Profession and Insurance Companies in the Prolongation of Life." He did not advocate the insurance of invalid risks, but intimated that the time might come when a better understanding of the varying longevities of invalids may lead to a knowledge of their insurability. A study of the mortality statistics of the Mutual Life Insurance Company of New York shows that as early as the third year of insurance most of the advantage of the selection of risks is practically lost. From the second to the tenth year of insurance there is a mortality of 23 per cent. from some form of tuberculous disease. Believing latent tuberculosis to be the cause of more failures in health than is usually supposed, Dr. Denison urged the employment of more exact and systematic safeguards against accepting such lives on an equal footing with selected healthy risks. To this end, spirometric and manometric records should be included in the report of the examiner. Then, if either or both are below a given fair standard (say 25 or 30 per cent. below) for height, sex, age, etc., the exposure of the chest and the taking of the semi-circumferential measurements of the two sides should in all cases be required. By these measurements the following results will be reached: First, if an unnatural difference in the respiratory movements of the two sides of the thorax has to explain, by inference, a deficient spirometric record, with a manometric record normal for that person, then surely that inference indicates fibrosis or pleuritic adhesions and perhaps latent tuberculosis. Second, if, with a similar variation in movement, a marked deficiency in the manometric record has to be explained, the spirometric record being all right, then the inference is indicative of positive weakness, which must influence the applicant's vitality. Third, if, however, deficiency below a standard of health both in the spirometric and manometric record can or cannot be accounted for by deficient movement of one or both sides, there is then a suspicion of weakness, to possibly elucidate which a more careful investigation is needed before accepting the risk.

DR. SIEGER, of Brooklyn, stated that he understood the paper to advise insurance companies, as a business investment, to send their tuberculous cases to the West to regain health. On account of the novelty of the suggestion he moved that a committee be appointed to take the paper and its reccommendations into consideration, and to report upon them before the close of the Association meeting. Such a committee was appointed.

DR. J. H. HOLLISTER, of Chicago, then read a paper on "The Treatment of Cholera." He accepted Koch's bacillus as the cause of cholera, and said that the problem is to prevent the transfer of the organism from one person to another. Sterilization of everything coming from the sick is the certain means of safety. In treatment opium is now discarded. Treatment with an acid is common in the first stage; sulphuric acid drinks are best. Thymol was recommended, hypodermatic injections having proved remarkably successful. Tannic acid, however, is the most praised of all drugs. It is to be given by rectal injection, together with large amounts of water. Much is hoped from Haffkine's method of inoculation.

DR. PINE, of Chicago, thought it a formidable undertaking to sterilize one thousand square inches of intestinal mucous membrane. Opium is the essential ingredient of all cholera-mixtures, and he would prefer the opium-treatment to-day to any of those advocated.

DR. WHITTAKER, of Cincinnati, read a valuable paper on "The Present Status of Tuberculin," in which he set forth the reason and methods of the action of the agent. If the preparation be too energetically employed it may increase the virulence of the bacilli and scatter them throughout the system. It excites a true acute inflammation, just as the living bacilli themselves do within the system. Koch's followers attribute the bad effects to complications and to improper administration, but maintain that the agent is a true specific for tuberculosis. Every claim made by Koch will be substantiated, and to use it is to believe in it. It must be remembered that there are no uncomplicated cases. Human tuberculosis differs from laboratory tuberculosis. Invasion by micrococci is often secondary to the tuberculous. Invasion by streptococci is probable whenever cavities exist. Tuberculin is of the utmost service and certainty as a diagnostic agent. It is especially valuable as a therapeutic agent in incipient cases, and in other diseases when the existence of tuberculosis is masked by unexpected symptoms. Quiescent cases should be left alone and all cases individualized. Tuberculin reaches the cause of the disease, and is more rapid in its curative effect than any other therapeutic agent.

DR. DENISON, of Denver, agreed with Dr. Whittaker, and alluded to tuberculocidin, which he often uses in preference to tuberculin. He relies on this method in selected cases, and commends especially its use as a diagnostic agent.

SECTION ON OBSTETRICS AND DISEASES OF WOMEN.

FIRST DAY—JUNE 6TH.

The Chairman, DR. J. M. DUFF, of Pittsburg, delivered the Annual Address. His subject was "Some General References to Obstetrical and Gynecological Advancement." He said that the large number of papers offered from all parts of the country, from men of the highest standing in the profession, is significant of the general zeal and welfare of the American Medical Association. Regarding operative work, the solicitude of many with reference to the operative mania that had taken possession of the profession during the past few years is not without cause. No one would have the temerity to deny that there has been, and yet is at the hands of some, too much indiscriminate, useless, and ofttimes reckless

abdominal, gynecic, and obstetric surgery. The past year has witnessed a great improvement in this direction. Few diseases are more prevalent than carcinoma of the uterus, and none was formerly more universally fatal. There is now a very general consensus of opinion that the disease is of local origin, and not, as formerly supposed, a general disease, with a local manifestation. In 474 hysterectomies at the hands of five different operators, there was a primary mortality of only 8.4 per cent., and at the end of two years in 56.25 per cent. of 82 vaginal hysterectomies performed by Leopold, the patients were living without a recurrence of the disease. The gynecologic treatment of the insane has been one of the live topics during the year. The intimate relationship existing between the brain and the generative organs would rationally lead us to infer that in women predisposed to insanity, disease of the organs of generation might in some cases be an exciting, if not a direct cause of mental alienation. Absolute proof could be found in the results of a number of painstaking investigators.

DR. CHARLES P. NOBLE, of Philadelphia, read a paper entitled "The Causes of Diseases of Women." He called attention to the fact that within recent years the thoughts of gynecologists had been largely occupied with the study of the pathology and treatment of tubo-ovarian disease, and that, as a consequence, very little had been said in a systematic way concerning the causes of the diseases of women. The object of the paper was to present a brief outline of the nature of the causes of diseases of women, and to point out that these causes are largely of a preventable nature. The principal causes are: 1, imperfect development of the sexual organs; 2, gonorrhea; 3, septic inflammation following child-birth; 4, lacerations due to child-birth; 5, miscellaneous causes, including constipation, erroneous habits of life, and errors of dress.

DR. HOWARD A. KELLY, of Baltimore, called attention to the great importance of tuberculosis of the female genitalia. Many of the cases that come under his observation are tuberculous in character. He should say that at least 5 per cent. of the cases of inflammatory diseases upon which he operates are tuberculous.

DR. E. P. DAVIS, of Philadelphia, directed attention to neuralgias, and more particularly those of the pelvic viscera.

DR. JOSEPH PRICE, of Philadelphia, was satisfied that many menstrual disorders begin in infancy, and that vulval and vaginal discharges in infants are neglected. Some infantile conditions are over-treated; and many young women would conceive and bear children had they not been treated.

DR. REED, of Ohio, said that deranged or vicious menstruation grew out of imperfectly developed sexual organs. The most difficult cases he had to manage were those in which both the uterus and other organs were undeveloped.

DR. HENRY J. CARSTENS, of Detroit, could not entertain the opinion that gonorrhea is the cause of nearly all the diseases of women. The habit among women of inducing abortion is an etiologic factor of paramount importance.

DR. HOFF, of Ohio, protested against the statement that many young girls have had gonorrhea. While this might be true in Philadelphia, it will not hold good in Ohio.

DR. JOSEPH HOFFMAN, of Philadelphia, called attention to affections of the bladder incidental to parturition and to the puerperal state, brought on by constipation and by dislocation of the uterus, etc. He thought that many of the troubles with which women are afflicted, such as displacements, retroflexions, subinvolution, etc., could be avoided by insisting that the patient remain in bed for two weeks after childbearing.

DR. E. H. N. SELL, of New York, cited families in which the younger members, boys and girls, had gonorrhea. In one case the disease extended so as to involve both bladder and kidney.

DR. L. S. MCMURTRY, of Louisville, said that intrapelvic inflammations sometimes result from forcible dilatation of the cervix. He is satisfied that a great many cases of tubo-ovarian disease result from the habitual and routine application of caustics to the cervix uteri.

DR. JAMES P. KERR, of Pittsburg, followed with a paper on "Puerperal Hemorrhage." He stated that there is no class of cases that require more prompt action and wise judgment. Every case should be treated independently, and as though hemorrhage were impending. Attention should be directed to securing tonic contraction and retraction of the uterus as a prophylactic. This may be accomplished by carefully following the uterus down with the hand after the child has been expelled, and by making pressure over the fundus and by external manipulations. If the uterus be soft and flabby some preparation of ergot should be given, preferably ergotin by hypodermatic injection. It is stated that caffeine acts more readily than ergotin if the patient has lost much blood. Hydrastis canadensis is also considered a useful remedy in the treatment of hemorrhage, both during pregnancy and during and after parturition. It should be administered to all patients with a predisposition to flooding. Plugging the vagina has been advocated when the os is dilated, but this is not considered good practice. A novel mode of treatment consists in inverting the uterus, and putting an india-rubber band around the neck of the inverted organ; at the end of six hours the band is removed and the uterus replaced.

The following recommendations were made by the Nominating Committee: For President, James F. Hibbard, of Richmond, Ind.; for First Vice-President, John C. Wyeth, of New York; for Second Vice-President, I. N. Love, of St. Louis, Mo.; for Third Vice-President, Thomas Murrell, of Little Rock, Ark.; for Fourth Vice-President, U. O. B. Wingate, of Milwaukee; for Treasurer, R. J. Dunglison, of Philadelphia; for Secretary, W. B. Atkinson, of Philadelphia; for Assistant Secretary, L. H. Montgomery, of Chicago; for Librarian, George N. Webster, of Chicago; for Editor of the *Journal of the Association*, J. C. Culbertson, of Chicago; for Trustees to fill the places of those whose term has just expired, John B. Hamilton, of Chicago; L. S. McMurtry, of Louisville; E. F. Ingalls, of Chicago; E. E. Montgomery, of Philadelphia; for Members of the Judicial Council, J. N. Quimby, of Jersey City; J. McFadden Gaston, of Atlanta, Ga.; A. F. Jonas, of Omaha; H. J. Murphy, of St. Paul. The next meeting to be held at San Francisco, California.

(To be continued.)

THE MEDICAL NEWS.

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ORIGINAL ADDRESS.

MEDICAL JOURNALISM.[1]

BY MR. ERNEST HART,
EDITOR OF THE "BRITISH MEDICAL JOURNAL," ETC.

I LEFT England at a moment of great pressure of public business in order to have the pleasure of fulfilling this engagement. So great, indeed, was the pressure that a few days before starting I telegraphed Dr. Culbertson that, to my great sorrow, I feared that it would be impossible for me to leave uncompleted Parliamentary work which I had in hand, as Chairman of the Parliamentary Committee of the British Medical Association on behalf of the Army Medical Department and of the Medical Officers of Scotland. However, it is not only faith that will remove mountains, but the heart's desire is almost as potent. I have come because you wished me to come, and because I wanted to meet you; I came to exchange that hand-shake which is a simple and moving expression of friendship between English-speaking men of the old country and the new.

Now that I am here, I feel how little it is, beyond the expression of good-will, friendship, and esteem, which I have to say. But presence is more than words, and, under such circumstances, is in itself a message—one of which I ask you to accept the dumb eloquence and to make that the apology for imperfections of my desultory and hesitating words, for Englishmen are dumb dogs, and I am no orator, as every born American is. In vain extenuation of our verbal deficiencies, we try to remember the injunction, *facta non verba*, and I would again ask you to accept the fact of my presence as an excuse for the poorness of my words.

Speaking as a journalist to journalists, I have chosen as my theme "Medical Journalism." I have had now some thirty years' experience of it, and it is of the lessons learned and to be learned that I shall endeavor to take counsel with you.

JOURNALISM AS A CAREER.

During those thirty years a great change has come over the world of literature, science, and politics. In that change, which journalists have largely helped to bring about, their functions, their power, and their duties have been largely transformed and inevitably magnified. The mission of the medical journalist is a great one; it is no longer an accidental function of an otherwise busy man's life. Even the ablest men who have taken that view of journalism have failed to make much mark in that calling. I refer to men of such capacity and standing as Jenner, Quain, Spencer Wells, Barnes, and Jonathan Hutchinson—all of our later time. It offers a career that repays and requires undivided devotion; one that may fulfil high ambitions and subserve large usefulness. I speak of it as a mission; for no man can reach the ideal of medical journalism who only writes to live; he must live to write.

THE IDEAL QUALITIES OF THE JOURNALIST.

The ideal journalist needs to cultivate many qualities which it is not always easy to combine. He should have rapidity of initiative and promptness of decision, for slow deliberation is the grave of opportunity. He needs quick and catholic sympathy; for this is a great source of power; but a corresponding capacity for just indignation is its necessary correlative and qualification. Magnanimity is a necessary editorial quality, for often the best way to remedy injuries is to forget them. An editor must know what to pass over as well as what to note, and must be able and willing, often graciously and tenderly, to ignore what others know. He must be accessible to all; and while appreciating the personal acquaintance and justifying the confidence of the leaders among whom he lives and ranks, he needs to be in daily touch and constant sympathy with the professional masses, whose requirements and rights it is his especial function to voice and to champion.

GUIDING PRINCIPLES.

To be really useful and to be really powerful, two things which are almost synonymous, the editor of a medical paper must, in his public capacity, even more than other men in their special spheres, always govern his course and be prepared to justify it, by referring each individual case to a recognized basis, and a logically defensible principle. He is a leader militant; he must be a standard-bearer, and must have always a motto inscribed upon his flag. I long since chose mine. It is one to which many thousands of our profession in Great Britain have rallied, and I do not see any prospect of needing to change it for many years to come; my guiding principle has been and is "The government of the profession by the profession for the profession." You will recognize in this formula the altered words of one of your greatest statesmen. Of the medical press, even more than of the general press, may be used the words of one of the ablest of modern editors, that it should be at once the eye, the ear, and the voice of its readers, and especially of the lowly among them. It should be the visible speech—the phonograph of all ranks. It confers a chieftaincy which arises out of its being the servant of all. Among its great powers must be counted that not only has it the casting vote in many decisions—great and small—but it has also both initiative and power of closure. It can declare urgency, or shut down discussions. It is a Parliament always open, and of which the editor is not only chief orator, but he is also speaker and chairman of committee.

[1] An address delivered before the American Medical Editors' Association, at its meeting in Milwaukee, June 5, 1893. Special stenographic report kindly revised by Mr. Hart for THE MEDICAL NEWS.

POWERS, PRIVILEGES, AND PAINS.

With its privileges and responsibilities come many pains. Journalism entails much sacrifice.

An editor needs, and must have, many enemies; he cannot do without them. Woe be unto the journalist of whom all men say good things. A man, says Oliver Wendell Holmes, whose opinions are never attacked is beneath contempt. For every real thought on every real subject knocks the wind out of somebody. *Compesce mentem; durum sed lævius fit patientia quicquid corrigere est nefas;* which, freely translated, may be summed up in a few words: Bide your time, keep a cool head and quiet mind. Time cures all things, and patience softens hardships. Editorial work, like all other good work, is largely one of self-sacrifice. It is the grave of literary reputations and the despair of literary ambition. In writing leading articles, as Washington Irving found in voluminous correspondence, "your mind is torn from you in strips and ribbons," which are scattered to the wind, and your thoughts leak out in driblets which barely moisten the earth. Where is there a literary memorial of any, even the greatest among editors? Perhaps Addison might have survived by his *Spectator* alone, but he was an essayist rather than a journalist. St. Beuve has left a monument of literary criticism, but not, it is to be feared, "more lasting than brass"; but Delane, wise and great editor as he was, the brilliant Fonblanque, Hutton, philosopher and moralist, have but written, I fear, their names in sand, and that is the common lot of all journalists as such. In their works they shall live, but their names, hardly known even in their own day, shall speedily be forgotten. That is at once their glory and the penalty in which they must rejoice. Their influence, far-spreading and enduring, their unseen power in the shaping of events, is the reward of their self-effacement.

An editor must quickly form opinions, and firmly express them, but he does well not to enter into controversy. "For controversy," it has been well said by Dr. Oliver Wendell Holmes, "equalizes fools and wise men in the same way—*and the fools know it.*" It is a prudent thing to refuse to be drawn into controversy, especially in the pages of one's own journal. Don't lose time in altercation, for in much altercation truth is lost. Let every man have his say, let him contradict you, let him attack, provided he does so in the limits of courtesy and of good temper. Learn from him, and let others learn. Do not answer him or put tags to his letter, unless some rectification of facts is necessary. Among the earliest lessons for an editor to learn, and it is one also which must last him during all his life, is to be slow to think evil, and to be hard of hearing for personal accusation. The accused so often turns out to be whiter than the accuser.

REVIEWS AND REVIEWERS.

If now we may, in passing, linger for a moment in the field of technical details to speak of some special editorial difficulties, I will select as not the least trying that of the fair and kindly conduct of the department of reviewing. It is an obvious truism, often clothed in the millinery of epigram, that the auther who sends a book for the candid opinion of the reviewer, as he says and believes, almost invariably expects it to be praised. Anything cooler than a warm shower of eulogy chills him; a lukewarm mixture of praise and blame makes him shiver; a rain of cold criticism is apt to make his teeth chatter—with rage; and for this there is great excuse. Of a book, even more than a child, the author is apt to say to himself: "It is a poor thing, but mine own." The condemnation outrages not only a man's self-esteem but his parental affection. It is well, then, to advise the younger reviewers, who are apt to be arrogant and satirical on small provocation, to temper justice with kindness; to seek out merits as wells as defects; to endeavor to portray the character of a book when passing judgment, and to forego the savage joy of cutting up the product of the feebly well-intentioned. Rather pass their work over in silence. But there is a tribe of books, wares of the self-advertiser and the vulgar notoriety-hunter, flags of the unscrupulous privateer who flies, without a warrant, the colors of the specialist; signboards of the masquerading quack. Of these it must still be said: "When the culprit escapes, the judge is condemned." But it is of literary quackery in high places, of the empty platitudes, of the ill-written inanities, of orations, discourses, and lectures by men who, having attained professional distinction, fail to set aside time for continuous intellectual culture—it is of these that it becomes the medical journalist to harden his heart to the unforgiving judge. He alone can venture fearlessly to do so, and he ought to do so, for they not only disappoint but they mislead. They lower the literary standard of medicine, which is already inadequate.

LITERARY STYLE.

That brings us to the subject of literary style in medical journalism, which may be dismissed, however, in very few words. An editor is often asked by young writers: "What style would you recommend me to adopt? and what advice can you give me for writing in your journal?" I don't know what your view may be, but it has always seemed to me desirable to recommend the avoidance of style, and to advise those who seek counsel on style, consciously to avoid it and to try chiefly to say what they have to say as clearly as possible, and to seek mainly the accurate expression of precisely the shade of meaning which it is intended to depict. It is a golden rule to think out clearly and precisely what there is to say, and to say it shortly and without ambiguity. People who are anxious about style are generally those who have little or nothing to say, and they are precisely those who take longest in saying it. It is generally difficult to say nothing without saying it at great length, and medical stylists are among the bores of the profession and the terrors of the medical journalist. On the other hand, nothing will compensate for the want of clear and grammatic expression; nor is there any department of journalism in which pompous rhetoric and the straining after jocosity is less graceful than in medical journalism.

ORGANIZATION OF THE MEDICAL JOURNAL.

I have nothing to tell you which you probably do not know better and from more modern sources, and from your own experience on this subject; but I can, in a few words, lay bare to you one or two secrets of our press-room, and leave you to value or to cast them away.

Many of us here were educated in the old school of journalism, which relied chiefly on the permanent staff of leading article-writers and reviewers, to whom were allotted, from week to week, everything in their respective departments. When a very young man, and while still residing in hospital, I wrote the editorial "Notes of the Week" for a leading journal. Three columns a week was the allotted tale. To another member of the staff was intrusted three columns of "Answers to Correspondents," and so on from cover to cover. In some high places I believe that system still survives; it seems to me effete. At any rate, I have abolished it for the last twenty years. The only system that seems to me adequate to the real needs of professional readers is that in which every unsigned editorial paragraph is written by a specially selected expert. That is the principle on which I have modelled the journal I have the honor to conduct. Every letter received, every paragraph, every cutting editorially dealt with, is referred to an expert having special knowledge and being a recognized authority in the matter. The recent examination of our books shows that to fulfil the requirements of the comparatively few pages of our journal devoted to unsigned editorial matter, we need and employ the services of an effective staff of nearly two hundred and fifty editorial writers. Of these upward of forty contribute on an average to our pages every week—often only a few lines each; for our object is authoritative accuracy; our literary aim is brevity and fulness; and our difficulty is condensation. It is a laborious and difficult method, involving heavy daily correspondence and constant vigilance to guard against personal eccentricity or prejudice or—that bugbear of journalism—unjustifiable censure. But that method may, I venture to think, be recommended as one that gives authoritative accuracy, reality, and trustworthiness to journalism. A medical journal, in order to rise to the height of extended usefulness, needs to be written from end to end by experts; and so far as the *Journal of the British Medical Association* may be considered to have been a success, that success has, I believe, largely been due to the fact that no pains or necessary outlay has been spared to provide that every line in every department shall be written by persons who are themselves trustworthy experts; that it shall be free from padding, and in its smallest details real and true; worthy of confidence in statement of fact, and free from the rehash of second-rate opinions gathered from second-rate sources.

I may venture also to suggest that it is a great advantage to a journal and to the profession which it represents that it should be connected with living organizations, local or general. Energy becomes in itself a merit when otherwise it would be a fault; when there is an organization that underlies and is capable of overruling it; when the journal is not only a voice—*vox et preterea nihil*—but also an undisguised personality and associated with influential standing committees. A journal becomes thus an active, permanent, and ever-living power in the State, and it is from the combination of a journal with an association that the highest development of this form of professional and social influence, I believe, may be fairly demanded and expected. And our experience has shown that it is not always expected in vain.

MEDICAL ETIQUET.

A class of questions which give an editor frequent occupation for thought, and sometimes some passing trouble, are those known as questions of medical etiquet. The value, the uses, and the meaning of medical etiquet are very variously estimated. There are those to whom it is *fetich*, and those to whom it is *tabu*; to some it is a name of terror, to others a term of derision; some assume to hold themselves above its reach, others are obviously below it, and some outside of it; but consciously or unconsciously all are affected by it. The philosophers hold it to be unnecessary because superfluous; but it is perhaps true, however paradoxic, to say that in our complex modernity of civilization it is often, and sometimes chiefly, the superfluous that is felt to be essential. At any rate, it is chiefly our superfluities that become indispensable. The philosophers are apt to predict that medical ethics have no separate existence, apart from or antagonistic to the rules of general ethics. Far from being a reproach or a ground of detraction or a reason for abolition, that is one of its highest claims to respect, and a fair measure of its usefulness. Medical ethics are particular cases of general ethics. They constitute the bulwarks and the outer fortification of the central fortress. Do unto others as you would have them do unto you, is the golden rule which is enclosed within the casket of general as of medical ethics. But society has found it necessary to formulate a vast number of accepted laws of conduct which are none the less necessary for daily use because they may all be found inscribed in the Ten Commandments. The two hundred and forty Levitic commandments, the Gospel rules of conduct for life, and the whole code of modern legislation for the regulation of social relations, are not superfluous, because they may be traced to the simple Mosaic tablets, and to the Sermon on the Mount. In the complex relations of medical life questions daily arise involving principles upon which every man might, after due thought, decide for himself. They include applications of principle which every man might work out if his intellect were always keen, his judgment well balanced, his interests calmly self-judged and easily put aside when they conflict with the general interest. So perfect a being might be content to be a law unto himself; but for others less perfect it has been found in every walk of life that it is well to have at hand, stored in the memory or laid down for reference, decisions and rules already settled by the wisdom, the experience, and the judgment of the wisest and best of our predecessors and our contemporaries—that is, the code of medical ethics, and wise men will not despise it. Let me say in one brief sentence that many of us in Great Britain think it one of the highest and greatest claims to sympathy and respect of the American Medical Association, as a representative body, that it has framed and promulgated such a code and that it has made great sacrifices to uphold it. *Securus judicat orbis terarrum.*

There is one question that has from time to time cropped up in relation to medical etiquet, and that has long since been thoroughly settled with us, but as to which there is, I hear, still some difference of opinion among various sections of the profession here. It may be worth while to refer to it in passing, as an illustration

of the view that I have just expressed, as to the convenience of having the particular cases of medical ethics that involve some complications, carefully thought out and authorititavely settled. I am thinking, in saying this, of the question of

CONSULTATIONS WITH HOMEOPATHS.

Some ingenuity has been exerted in endeavoring to show or to suggest that the rule that prevails everywhere, and unquestioned throughout Great Britain, forbidding such consultations, is a selfish rule and contrary to the public welfare. If it were so, it would be self-condemned, for we are probably all of us here well agreed that the fundamental principle of medical ethics is that all rules laid down as part of the code are, and must be, as much for the welfare of the whole community as for the good guidance and advantage of the medical profession as a class.

The arguments that are sometimes used to indicate that the refusal of a practitioner of good standing to consult professionally with a homeopathic practitioner is contrary to the public good and a mark of illiberality and intolerance amongst regular practitioners, are a false, fabricated, specious, and worthless plea. On what is the demand for such a consultation based? The only correct and forcible basis is that it should be for the benefit of the patient. It is sometimes said that, at any rate, the regular practitioner can and ought to give his assistance in determining the diagnosis of the case. But the answer to that is plain as noon-day. We are not here, nor do we enter the sanctuary of the sick-room to solve conundrums. The medical mission is to heal the sick. The physician fulfils his function of the *ἰατρὸς* only when his diagnosis is to be followed by an effective treatment. Now, we all of us have the conviction that the treatment, so called, instituted by homeopaths as such, is absolutely ineffective, and does not and cannot, if faithfully carried out in accordance with what is known as the homeopathic doctrine and method, be of any avail whatever.

Of course, it is said that very often the so-called homeopathic treatment is not carried out by homeopaths. In that case the nomenclature is itself a fraud, and we are not called upon to soil our hands by taking part in any such imposture. But we treat homeopathy and are willing to regard it as an honest delusion. The physician, however, can take no part in such delusion. If he were to accept the position of a mere solver of riddles, he would lose all that makes medicine dignified and that ennobles its functions. He would be doing worse than this in entering into a consultation with a homeopath. We are entitled to assume that the homeopathic practitioner himself believes that his treatment of infinitesimals may be of some benefit to the patient. At any rate, we may feel sure that the patient entertains that delusion, and by entering into consultation over the sick-bed, the physician would ratify by his presence that understanding. The public could not understand that fine-drawn, artificial, and unholy distinction which would allow a conscientious practitioner to stand by the bedside of a man smitten with disease, trembling, perhaps, on the threshold of death, and on the paltry pretence of assisting to clear up the diagnostic difficulties of the case, to examine the patient and leave him to the tender mercies of one who, in his heart, he believes, and who, with all his intelligence, he is convinced, is a person carrying out a system of medicine, so called, which is absolutely incapable of affording to the patient such chances of life as the advancing inroads of disease may leave. Consultation with a homeopath, regarded from this point of view (and I know of no other from which it can fairly and worthily be regarded), is worse than a sham, worse than an imposture. It is a crime. On this head of conduct there is, I have said, no division of opinion throughout Great Britain, and any physician who should break that now well-established rule would be regarded as putting himself beyond the pale of ordinary professional intercourse with his brethren; and men would refuse, and before now have refused, to consult with any practitioner who thus misinterprets the true ethics of consultation.

No ingenuity, no special pleading can set aside, so far as I have ever been able to understand the matter, the prevailing ethical rule that underlies the decision of this particular case; and it affords, I think, a very good example of the importance of not leaving every man to draw his own conclusions and to work out his own deductions from the few central principles, but of having at hand decisions made deliberately and in general consultation on thorny points, which it requires some firmness of purpose and an immovable moral determination rightly to solve, without being misled by side issues. One or two eminent men, as I can recall in my early experience of journalism, allowed themselves to be misled by the specious cry of intolerance, and for a moment declared the intention of accepting, under the flag of liberality, the false position that I have indicated. It was but for a moment, and it would be unfair now to recall the name of the greatest among them, who quickly saw the error of his ways and drew back in time to save his great reputation and his spotless honor. I only refer to the matter thus briefly as indicating that for the wisest and greatest among us it is true that the honor and the esteem of the mass of the profession are likely to be surer guides than the acute intelligence of a few, although among these there may be those whom we delight to honor as leaders of the profession.

A strict adherence to the rules of etiquet is sometimes, with shallow scorn, stigmatized as trades-unionism. We can be well content to leave that phrase as it stands, but let us translate it into its proper language. Medicine is not a trade; it is a profession. And unions such as ours, such as yours, unions which are called the Association of Medical Journalists, or which are called the American Medical Association or the British Medical Association, typify and embody professional union. We accept and convert to our own honor and dignity and to the welfare of the public, the very phrase which is hurled at us as if it were a reproach. Yes, we here are all for medical union. Our duty as medical journalists is to promote professional union, and it is one of the great titles of the American Medical Association to honor, one of its great titles to the respect and the esteem of the profession in this country and in Great Britain, that on this matter of consultation with homeopaths it has chosen the straight and narrow path—that it has declined to be drawn off by the blandishments of those who offer a crown of liberality which looks flowery enough, but which is quickly shown, when it is handled, to be a crown of crackling thorns—one which, however decorated with the blossom of public applause, pierces the very substance of pro-

fessional honor and duty. It is the liberality of a Gallio which we are invited to accept as our ensign, but which the American Medical Association and the British Medical Association are unanimous in scornfully rejecting.

The voice of the profession has been and is in the end the surest judge of right. In all such questions of general conduct and universal rights, it is the rank and file of the profession with whom lie the duty, the power, and the privilege of decision; even in the face of opposition from those whom we delight with the title of leaders of the profession. That brings me to my final topic:

LEADERS OF THE PROFESSION.

No man attains that position nowadays without having earned it. No one should reflectively and consciously speak slightingly of the leaders; least of all could I. I have enjoyed the friendship and frequent opportunities of communication with men such as Austin Flint, Van Buren, Gross, Fordyce Barker, Marion Sims, Agnew, to speak only of a few of those of your leaders whose personality was best known to us in Britain, but who have, alas! gone over to the majority. No one could have known them without recognizing the signs of nobility of mind and strength of character. So with us, it has been a liberal education to have spent a life in frequent communication at successive periods, and on many great and small occasions with men such as the sagacious Brodie; Sir Henry Holland, a philosopher and traveller and a pioneer by intellect; Owen, the Cuvier of Great Britain; Watson, the Nestor of the last generation of medicine, and still a classic; Ferguson, lion-hearted and woman-handed; Syme, sturdily original and uncompromising; Simpson, a pathmaker in obstetric medicine and surgery; Christison, the type of prudence and candid research; Stokes, brimful of sagacity and humor; Corrigan and Porter, masters of the great Dublin school; and our own eminent leaders, such as Jenner, Lister, Andrew Clark, Paget, Quain, Spencer Wells, Henry Thompson, Hutchinson, all men who have risen by their own individual merits, and are known by their works. They have fruit as well as leaf.

It is not, therefore, in a cynical mood or snarling temper that I say: "Except in clinical scientific research—a great and never-to-be-forgotten exception—put not your trust in leaders. *Lucus a non lucendo.* They are called leaders, but so far as modern history shows and so far as my experience of thirty-five years teaches they are mostly led.

In the great social movement of medicine; in its human progress; in the development of the newer and wider functions of medicine; its relation to public life; its organization for the prevention of diseases, for the care of the sick poor by the State; for the organization of out-relief of hospitals in such manner as to prevent abuse; in most of the great movements of our day we have for the most part found them lagging, cold, or indifferent; feeling little enthusiasm for such movements in Great Britain as those that resulted in the appointment of the sanitary commissions, and in that organization of a public health system which laid the foundation of the new science and practice of diseases. It was Rumsey, Farr, W. H. Michael, who led the way and whom I found the most active promoters of a system that since then has furnished the model for the civilized world. They were general practitioners, without hospital appointment. The General Medical Council of Education and Registration was created at the instance of the British Medical Association, led by Hastings, its founder; Bottomly, of Croydon; Waters, of Chester. Provincial practitioners were the founders of that Council which has rendered such vast service for the cause of education, which was created and has been remodelled in the teeth of the active opposition and subsequent indifference of the leaders of medicine, ordinarily so called, who have, however, stepped into the leading places on it in virtue of their official positions.

So was it with the reformation of the workhouse hospitals and infirmaries, which are, with us, the hospitals of the State. That was, in its inception, the work of a medical journal, the *Lancet*, with which I was then editorially associated. It was carried out by Rogers, Carr, Anstie, and myself, with the aid of a vast body of lay support which we conciliated.

So has it been with the removal of the grievances of the army and navy medical officers. Until lately the whole of that great reform has been left in the hands of the Parliamentary Committee of the British Medical Association. The battle has been successfully fought by that representative body of general practitioners, and by them alone, until last year, when the Royal colleges united to secure the adoption of the recommendations of a War Office Committee, which, however, they had up to that date done little or nothing to obtain. I repeat, then: Rest not your hopes of any but purely scientific progress upon leaders, for the maintenance of growth in your organizations, and of your relations to the State and the people. When you have made up your minds, by preliminary discussion and in general session, as to what is needful, right, and wise, and when your cause is well advanced and winning all along the line, the leaders of the profession will generally follow. Don't mistake me that it is in the order of things. The leaders are always apt to resemble the conservative old world squire described by Washington Irving, who went religiously to church and sat in the front pew and joined boldly in the responses, because it seemed to be to him an excellent example to the lower orders to show that, though he was great and wealthy, he was not above being religious. The leading men are apt to join reluctantly in any new movement. The rails must be laid first and the roadway made secure, and then they are commonly willing to board the train and come along in the first car, with the flags flying and the music sounding, to receive the sympathy and the applause of the admiring crowd. This is not surprising. *Difficilis gloriæ custodia.* They have, for the most part, a great practice to attend to, which keeps them busy, and a great reputation to maintain, and to make a mistake might be a terrible thing. They are apt to be thinking *ex necessitate* of where they stand. Their tendency is to stand in the old ways, with which they have good reason to be satisfied. It is for us to take larger thought of where we are going.

We journalists need not be so much afraid of making a mistake from time to time. As your ambassador said not long since, at the Mansion House, London, to the great delight of his hearers: "The man who never made a mistake never made anything." We can all try to make as

few as possible, but it has been truly said, that genius consists not in never making a mistake, but in never making the same mistake twice over. We journalists need not be so much afraid of unpopularity. It is very often the case, and, as I suppose all of us have found it out in the course of our career, that it is not infrequently the forerunner of success. You cannot, if you would, avoid hatred, but you can take care that no man justly hates you. In the fulfilment of our public duties it is necessary to base opinions and policies upon a logical principle, and to hold personal interests and private prepossessions as of comparatively little account. We have all a natural love for friends and friendship, but private friendships which will not bear the strain of public differences must give way. Time will often happily repair ruptures which have given much pain, yet these are among the greatest pains and griefs of responsible journalism. But—

They are slaves who fear to speak
For the fallen and the weak;
They are slaves who will not choose
Hatred, scoffing, and abuse

Rather than in silence shrink
From the truth they needs must think;
They are slaves who dare not be
In the right with two or three.

ORIGINAL ARTICLES.

SUMMER DIARRHEA IN CHILDREN.[1]

BY GEORGE S. CAHILL, A.B., M.D.,
ATTENDING PHYSICIAN, ADAMS MISSION HOME, BURLINGTON, VT

THE most exalted function of the modern medical practitioner is becoming more and more considered the maintenance of the health of his community, and the prevention of disease, rather than the mere remedying of that already acquired. In no department is more earnest work called for in this direction than in the prevention of an, at present, overwhelming infant-mortality. Too few of us stop to realize to its full extent the meaning of this fact. We entertain a very general idea that infancy is hedged about with seemingly inevitable dangers, and have at the same time but a vague notion of the relative activity and ultimate origin of those influences that determine the fatal result. Anything like a systematic classification of these death causes is impeded by the most embarrassing obstacles.

A certain class in the profession and among the public at large manifests what seems like the utmost indifference. They admit the fact of an excessive mortality in infancy, but, following the principles of Malthus, profess to regard it as one of the wise provisions of Nature herself against a superfluous generation. The analogy of so many children "born to die" is by no means well taken. Nature *is* manifestly prodigal of her growth in the germ—but she is *not* wanton of her finished work. She scatters seeds by the million to the winds, while but a hundred take root and grow. She matures scores of Graafian follicles in the human ovary for every ovum that is brought to full development. But at this point—the point of the appearance of the individual existence—the parallel stops. Thereafter the new life, with its host of possibilities, has an economic value, and every sacrifice of it is an economic loss.

An even more serious obstacle to our accurate classification is the poverty of our vital statistics, the nomenclature and methods of tabulating death-causes being in a state of the utmost chaos. Ignorance and glaring neglect are allowed to masquerade behind such unscientific terms as inanition, marasmus, scrofula, heart-failure, and the like, and until the American Public Health Association, or some similar authority, forms a satisfactory table of mortuary statistics, and secures its adoption by State and local Boards of Health, any systematic classification must at best be approximate.

The province of this paper being entirely the consideration of the nutritional diseases—by all statisticians considered to be the most important in the classes of death-causes in infant-life, most important alike in the order of their numerical frequency and in the possibilities of their prevention—let us review the members of these groups. Cholera infantum—a term made to do duty for almost every form of infantile diarrhea—is in its true character the consequence, in all probability, of a germ that finds an easy culture in the disordered alimentary tract of the infant. In the sum-total of deaths laid at the door of this complaint are often included under various statistical tables, gastro-enteritis, and its attendant symptom, diarrhea. Gastro enteritis is a comprehensive term, covering as it does diarrhea, gastritis, enteritis, and gastro-intestinal catarrh, described and detailed by some authorities.

In the same group with these gastro-enteric diseases is included marasmus—a name covering all of the death-causes to which this term and such unscientific phrases as inanition, infantile debility, and malnutrition are ordinarily applied. It is intended to be descriptive of conditions that involve any subacute or chronic malady of infancy in which indigestion, alternating constipation and diarrhea, vomiting and non-absorption or non-assimilation of food, are the noticeable symptoms that variegate the progressively downward course of the suffering infant, which is simply ill-nourished and ill-fed, and which finally falls a victim to gastro-enteric disease and its attendant nervous sequelæ, conditions that are related to each other by their most common characteristic, a disturbance of the digestive organs and an invariable impairment of nutrition that results therefrom, and that are further related by the similarity of those errors of hygiene that underlie

[1] Awarded a prize of $25 by the Vermont State Medical Society.

them all. As such, and so understood, marasmus finds its proper place among other nutritional diseases.

In the relation of sequelæ to this group of maladies stand the nervous diseases. As a matter of course, this is not always the case, but it is very commonly true. Meningitis may appear even in infancy as a primary disease, but its occurrence as such is rare. This and the term cerebral congestion are used somewhat doubtfully as respects their true pathology to describe those conditions of brain-exhaustion that are so commonly the final act in the tragedy of an infant's life wasted by cholera infantum or gastro-enteritis. Especially true is it that convulsions, invariably the result of some primary disease, appear usually as a late or sudden consequence of gastric or intestinal irritation. Making allowance for their occasional primary existence, or their relationship to other disorders, these nervous maladies, added in due proportion to the nutritional diseases we have grouped together, constitute the means of the causation of at least 35 per cent. of the entire fatality of infancy.

One and all of the members of these two classes should be included to a very great degree among the preventable diseases. They are truly death-causes—but causes that in their turn are the effects of a primary and ultimate, and an almost universal, neglect of the hygiene of infancy.

In the face of the prevailing ignorance, it devolves upon the medical profession to educate the public in the principles of infant-hygiene. Three factors enter prominently into the etiology of these diseases, viz.: heat, moisture, and improper food. Heat and moisture, acting upon the food, supply cause for fermentation, and rapid increase in bacterial development. The ingestion of food thus altered is in many instances followed by dyspepsia and diarrhea. A hot summer is always accompanied by a high mortality among infants, especially among those living in cities. This destruction of lives so valuable to the Commonwealth may be mitigated by the instruction of parents:

First. As to the danger of heat, and how to avoid it.

Second. How to prepare the food of the infant, so that it will do no harm.

Third. How to carry out the simpler rules of hygiene.

It is most important to combat the heat, and parents should be fully instructed how to do so. During the hot period of the day the baby should be kept in the coolest part of the house, and the clothing should be lessened in amount. Strict regard must be paid to the food-supply. Breast-fed children are by no means as liable as hand-fed children to suffer from the diseases of summer, and when they do, are much more readily cured. But many are artificially fed. A perfect substitute for mother's milk has not yet been found. It is now very generally conceded that cow's milk, modified by the addition of certain substances, is the best substitute, approaching most nearly to the natural supply. With a little care children do very well upon a milk-diet until the hot weather. A day or two of this and the trouble begins. The milk undergoes certain changes. It rapidly absorbs atmospheric impurities. If kept in an open vessel in an ice-box, along with meat or decaying vegetables, it will quickly acquire a peculiar taste and odor. Milk is very likely to undergo fermentation, and become sour during the night. Many children are given milk that has become altered since the mother went to bed. The child is hungry and crying; the mother has no fresh supply, so that the infant receives a dangerous food. Many diarrheas start in this way that would never occur if new, unchanged milk were given.

If we hinder the fermentation, and prevent impurities getting into milk, we shall prevent much disease. To avoid contamination from surrounding air-impurities, milk should be placed at once in tightly-sealed vessels, instead of being kept in cans, as it commonly is. The bottled-milk idea is a step in the right direction. If we can hinder the fermentation of milk, so that the infant will just as surely get a sweet, clean supply by night as by day, we can prevent many cases of diarrhea. Milk should be sent to its destination as quickly as possible. When received it should be sterilized in a water-bath after some one of the modern methods, or some modification thereof. Fermentation being thus prevented, the milk should be kept in bottles tightly corked, in a cool place, until wanted.

On the morning of June 20, 1887, I witnessed at the Boston City Hospital the following experiment with a quart of milk obtained from a reliable source. Six new two-ounce bottles were very thoroughly scalded in hot water. Three of the bottles were filled with milk and placed in a water-bath. In twenty minutes they were removed, quickly corked, and when cool were placed in an ice-box. Twenty-four hours afterward one bottle was opened. The milk was found to be perfectly sweet. On the evening of the same day, thirty-three hours having elapsed, another bottle was opened. Taste and smell could discover nothing amiss. On June 24th the third bottle was opened. The milk was tested by several persons, and declared to be perfectly sweet and good, four days having elapsed. This experiment represents what we wish to do: render innocuous any harmful element contained in the milk, and keep this pure and unchanged. It demonstrates that milk may be kept wholesome for even a longer time than is necessary. The baby may

have a proper food-supply in hot weather, and the food-cause of diarrhea be obviated.

Often we might prevent the disease by a few minutes of instruction to the mother. She is directed to obtain two small soda-bottles. They are strong, and can be tightly corked. The rest of the apparatus will be found in every household. A saucepan is to be filled with water sufficient to reach to the neck of the bottle. The bottles are to be thoroughly washed, filled with milk, and placed in the saucepan, and laid on the range. A cover excludes the air. In about twenty minutes the bottles are to be tightly corked and laid in a cool place. Mothers readily understand this procedure, and carry it out successfully. The outlay of a few cents for bottles covers the cost of the apparatus. When the child is to be fed, one of the bottles is opened and the amount required poured out. The bottle is to be re-corked, and returned to a cool place. The second bottle is not to be opened until the contents of the first are exhausted. The infant's sanitary surroundings are to be carefully inquired into. Mothers should be instructed to keep their children perfectly clean. Soiled linen should be immediately removed. Children should be repeatedly bathed, and an abundance of fresh air and light afforded.

In all cases of cholera infantum or gastro-enteritis of any degree of severity, rest is the *sine qua non* of treatment, and takes the place of much unnecessary medication. When an infant is suffering from any form of gastric or intestinal disturbance, it is well to order a period of complete abstinence from food, varying in length according to the gravity of the case. This period may be wisely occupied in freeing the digestive canal of its irritating contents, which, undigested, act as foreign bodies upon the diseased mucous surface. The sooner the entire alimentary canal is freed from these irritants the better. To lock them up in the bowels by the administration of opiates is the worst possible practice. Rest—complete rest—can only be obtained for the diseased part by the emptying and cleansing of the tract and the temporary withdrawal of food. Whenever the nervous system is suffering, as it so commonly does in consequence of gastro-enteric disease, this necessity of rest is doubly emphasized.

It is in the field of these disorders of nutrition that the best and readiest hope lies of diminishing the mortality of infants. It is by the means of these diseases that so many homes are turned into places of mourning. It is these ills that offer the best chances of prevention and the largest possibilities of cure.

Dr. C. B. Penrose has been elected Professor of Gynecology in the University of Pennsylvania, to fill the vacancy occasioned by the resignation of Dr. Goodell, who has been made Honorary Professor of Gynecology.

THE SPELLING OF SOME MEDICAL WORDS.[1]

BY GEORGE M. GOULD, A.M., M.D.,
OF PHILADELPHIA, PA.

1. OF all the languages of the civilized world there is none that in the most distant manner can rival the English in the ludicrous illogicality and wretched lawlessness of its orthography. In other languages there is a manifest philologic sanity that evidently seeks to hold the written (or printed) word in some sort of relationship with the spoken word. But in our language the reverse seems to be the case; the more methods in which a single sound can be spelled the better it seemed to please the fathers of the language. As Professor Lounsbury says: "There is nothing more contemptible than our present spelling, unless it be the reasons usually given for clinging to it."

2. The labor which this fact imposes upon the child's mind, and upon all minds that, so far as language-learning goes, persist in the pre-pubertic stage, is a labor that conceived in its entirety is literally appalling. The German child learns in one year, and well, what the English child learns in three, and poorly.[2] It is so tremendous a labor that even few educated men reach unconsciousness and ease of orthography, and for the great mass of people it is a constant source of worry or chagrin. To a vast number of people the secret consciousness of their orthographic failing keeps them from the pleasure of writing and composition, or prevents them from profitable employment. To every person that writes, the excess of labor required by our barbaric spelling is a huge waste of time and a heightener of the friction of life. With the correlated barbarism of pronunciation, it is the greatest obstacle to the spread of English as the world's great, sole tongue.

3. The foregoing facts are so incontrovertible that no one who has even cursorily looked into philology and pedagogics has any tendency to deny them. Equally certain is it that all of our great students and masters of philology are entirely agreed as to the tremendous importance of lessening the burdensome labor of education, and the friction of life, by some approach, great or little, toward the phonetic spelling of English words. As succinctly stated in his preface by the learned editor of the great *Century Dictionary*: "The language is struggling toward a more consistent and phonetic spelling, and it is proper in disputed and doubtful cases

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[1] Read at the meeting of the American Medical Editors' Association in Milwaukee, June 5, 1893.

[2] Professor March says that "it has been computed that we throw away $15,000,000 a year paying teachers for addling the brains of our children with bad spelling, and at least $100,000,000 more paying printers and publishers for sprinkling our books and papers with silent letters."

to cast the influence of the dictionary in favor of this movement, both by its own usage in the body of the text, and at the head of articles by the order of forms, or the selection of the form under which the word shall be treated."

Never has more capital been invested in similar enterprises, and never has more philologic erudition been gathered to the service than in the editing and publishing of those splendid lexicographic monuments of American scholarship, the *New Webster*, the *Century*, and the *Standard* dictionaries. It is equally true that in each case the most earnest desire of the men in charge of these works has been to go to the furthest admissible limit dared in recommending the shortening and rationalizing of the spelling of English words. They have only stopped when and where they thought further advance would result in a baulking, and a refusal of the people to follow.

Words fail me to express my amazement to hear men object to all change in the customary spelling. To be sure, they are but few, and those who have never given the matter an hour's thought or study, who thus blindly cling to the fetich of custom, stolidly resisting any change whatsoever. The changes that have been made, and that have become the rule—these they willingly accept. They have grown used to spelling *music* and *public* without a final *k*, and are willing to leave off this useless second tail. (The English even now stick to the final *k* in almanac.) But their mental forefathers as stoutly resisted the *curtailing* process, and their similarly-minded children will finally accept the changes that progressive minds are now forcing on their fathers. The stupidest, most disgusting thing in the world, is the brute conservatism that refuses all change, good or not good, from stolid, unreasoning desire for things as they are. Better chorea, ay, better epilepsy than absolute paralysis. Conservatism is the sham coyness of linguistic old-maidism, the crinolin fig-leaf of philologic prudery, a fig-leaf, too, not the result of too much, but of too little knowledge—indeed, of an abysmal ignorance of the history of the language.

And most strange of all is such a dead-blank wall of prejudice on the part of medical men. Their science is a progressive one; their life is harassed and hurried with the crush of duties and opportunities. Every hour's experience teaches them to ignore precedent and to cut by the shortest route to the desired end. No body of men is more hampered, and in no calling is labor so much thwarted as in theirs, by popular inherited prejudices, and the old unsloughed snake-skins of quackery, of myth, and of mummery.

The vast majority of medical words have not grown out of the old languages, either of the ancient living Greek or of the medievally preserved dead Greek. When a word is desired the modern minter snaps out his Liddell and Scott, gets some words that best suit his purpose, and shakes them together in his etymologic basket until they cohere into some sort of unity, not infrequently a very ludicrous one.

The argument most relied on by the obstructionists is the etymologic one. But even this poor scarecrow cannot be set up in our medical cornfields. I do not think the etymologic argument of much force, even in the general literary language, because already the form in a large portion of our words is altogether misleading, changed, or lost, and because the vast majority of people will and can never know anything of the etymologic rootings of their language. But, far more important still is the fact that with printing came the impossibility of a coinage ever being lost, its history unrecorded, or its tiniest rootlet unpreserved.

But far and away over all is the fact that the needs and the help of the living millions of bodies and minds present and to come outweigh linguistic and philologic considerations. Language was made for man, not man for language.

Moreover, and this note well, despite all the literary coxcombs and philologic old maids of Christendom, reform is inevitable. The people, with unerring instinct, are determined to mould their language into some better conformity to their needs. Slang is riotously rampant, and slang is language in the making. Some reform in spelling is as certain to come as future men and women are certain to come, and wisdom on our part is to accept the inevitable, and to make that inevitable as sensible as we can. As another has said: "The grammarian, the purist, the pernicketty-stickler for trifles is the deadly foe of good English, rich in idioms and racy of the soil."

All this is entirely too long an overture to a very small opera. I wish to beg my brother-editors to accept, and to unite in asking the profession to accept, certain tiny, innocent little changes in a very few of the words they use. Some time ago a valued contributor objected to our editorial suggestion that the *al* at the end of many of our adjectives was a useless length of tail that it were desirable to lop off. He could give no reason except that wonderful reason that it sounded better to say *chemical, biological, parasitical*, etc., than to say *chemic, biologic*, and *parasitic*. All argument was useless. I asked him if we should also, in his articles, spell *scientifical, basical, thermical, albuminoidal, mesoblastical, graphical, metrical*, etc., or should we leave off the already-dropped, old simian *al*.

Another valued contributor begged to be allowed to spell *hemorrhage, anesthetic, orthopedic*, and the like, in the fashion of his ancestors, *i. e.*, with the

diphthong. I asked, should we preserve the Greek diphthong in all cases, in *æther*, for example, instead of *ether*, and in hundreds of cases, where its retention would make his printed page the object of laughter, even to the etymologic sticklers. "Analogy to the dogs!"—and, of course, logic and argumentation also to the same animals.

After four years of careful investigation and great labor, the American Association for the Advancement of Science has adopted a set of rules for the spelling and pronunciation of chemic terms. Among these rules are those advocating the dropping of the final *e* in all such words as *bromid*, *iodid*, *chlorid*, and the like, and also in all such as *bromin*, *iodin*, *chlorin*, etc. Is there any reason, earthly or unearthly, for not following the suggestion?

While on the suicidal subject of analogy, reference may be made to the spelling of program. There are people who will use the analogic argument, if it serve their purpose, but forget it when it does not serve them. They will spell *diagram*, *anagram*, etc., without the overlong tail, but they are horrified at *program*. Old Dr. Johnson, in his "Contradictionary," spelled some word-endings *our*, others simply *or*. Some of his contradictionary aftercomers stick to his *honour*, *neighbour*, *favour*, and *colour*, though they would not be guilty now of *horrour*, *dolour*, *emperour*, *governour*, etc. They are indignant at meeting *meter* or *center*, but if you ask them to spell *diameter*, *scepter*, *sepulcher*, etc., they are like some other bivalves, they shut up—but "are of the same opinion still."

To conclude: There is not a single argument of value against a moderate and at least a small beginning of some kind of spelling-reform of our intolerable English orthography. As regards the spelling of medical words, any argument has less weight than as regards other words. We owe it to our profession to be progressive in this respect—at least, not to be a dead-weight to the car of progress, and, at the very least, not to pull backward, like an over-obstinate horse, when the wagon (with one *g*!) is pushed on to our heels. Wherefore, brethren, will you not assent to the little advance already gained, and will you not assent to a few little timid steps further? Every argument of logic and uniformity, and every motive of good-will and interest in progress, is on this side.

Why shall we not drop the conjoined letter diphthongs in all words? Let us spell all our words drawn from the Greek αἷμα, with the single vowel *e* instead of *æ*. Let us say *hemorrhage*, *hemostatic*, etc., clear through the list. The same with all other *ai*'s, usually spelled *æ*, as in *orthopedic*, *pediatric*, *anesthetic*. The same with *æ*: Let us accept *edema*, *celiotomy*, *diarrhea*, *fetus*, etc.

Let us adopt, with never a wry mouth, the "American spelling" of *honor*, *center*, *meter* (all the meters and liters!), *program*, and the rest.

Let us get a chart of the rules for spelling chemic terms adopted by the American Association for the Advancement of Science, and hang it in front of our desks, and never spell *iodid*, *sulphid*, *hydrid*, *morphin*, *chlorin*, etc., with more *e*'s than we should. It is easier to spell them without the *e*'s!

Let us be sensible rather than conservative!

THERAPEUTIC NOTES.

A Case of Sporadic Cretinism Successfully Treated by Thyroid Feeding.—THOMSON (*Edinburgh Medical Journal*, No. cdlv, p. 1022) has reported the case of a boy, eighteen years old, who presented the typical ungainly appearance of a sporadic cretin. In infancy he had been rather slow in learning to walk, and after his second year was noted to be backward in development. There was little increase in height, although the child grew broader and stouter. The mental condition also seemed defective. Treatment with a quarter of a thyroid gland, twice a week, was instituted, subsequently diminished to an eighth of a gland. In a short time the boy began to suffer from headache and pains in the abdomen, back, and feet, and from sleeplessness and restlessness at night. Hiccough, which had never before been observed, also occurred. At the same time the appearance of the boy was undergoing appreciable change. The swelling of the body grew rapidly less and the skin became softer than it was. Speech and intellection improved. In two months there was an increase of two inches in height. Improvement continued, though not quite in the same degree as at first.

The Use of Soya Beans in Diabetes Mellitus.—HALE WHITE (*The Practitioner*, No. 299, vol. l, No. 5, p. 322) calls attention to the utility of the soya bean (obtained from a Japanese plant, the daidsu) as an article of diet in cases of diabetes mellitus. The beans may be made into bread or into biscuits. Analyses have shown that these preparations contain almost the same amount of carbohydrates as gluten bread, and of these carbohydrates but little is sugar or starch. The oil is removed from the flour into which the seeds are ground. The biscuits, which are thoroughly baked and dried in the process of making, are quite palatable, and will remain good for an indefinite time; but the bread, however carefully made, will not, as a rule, keep longer than two or three days. The flour may, however, be prepared in other ways, and the seeds may be employed in the preparation of soup. Some caution may be required in the use of the seeds, as they are said to contain a purgative oil.

For Chorea.—

℞.—Syr. ferri bromid. }
Aquæ flor. aurantii } . āā ℥ij.—M.

S.—Two teaspoonfuls in water, thrice daily after meals.

The Practitioner.

The Medical News.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

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SATURDAY, JUNE 17, 1893.

SANITARY LEGISLATION IN PENNSYLVANIA.

DURING the recent session of the Legislature of Pennsylvania a number of very important bills were presented which were designed for the protection of the public health. Some of these bills have become laws, and some were defeated through the combination of private interests antagonizing the public good. The general result, however, is not disheartening, as much benefit must certainly follow the careful execution of the successful measures.

An appropriation of $100,000, to be made to the State Board of Health, was asked to enable the Board to adequately protect the public health in unincorporated villages and townships, and to take such measures as might be deemed necessary to guard the health of the people in view of the probable invasion of cholera with the approach of warm weather. This may be regarded as a contingent fund for use in case of epidemics, and would be of immense service in enabling the sanitary officials to act in cases in their very incipiency. As a compromise measure $50,000 were appropriated for this object, which will be a guarantee that no epidemic will be neglected for the want of funds to promptly treat it at the very beginning.

The bill to enable Borough Councils to establish boards of health, which passed finally and is now a law, will meet the pressing necessity for thorough sanitary organization and sanitary reform throughout the State, especially in the smaller towns and rural districts, which, in the absence of organization, would be without preparation for a threatened invasion of cholera and without the means of coping with the disease should it unfortunately be introduced during the coming season.

The "Hewitt Pure Food Bill," which is regarded as a very fair measure, although not as complete as it might be, is now in the hands of the Governor, awaiting his signature. This bill carries with it an appropriation of $5000 for the use of the State Board of Health in carrying out its provisions. This is legislation in the right direction. Its practical application during the next two years will enable the executive officers of the Board of Health to report wherein amendments will be of advantage.

It is matter of much regret that the Rivers Pollution Bill was finally defeated. No measure has been presented within recent years of more importance to the public health than this one, which has for its object the prevention of the pollution of the rivers and streams in the State of Pennsylvania. There was a time when, through the sparseness of population, the amount of sewage passing into the rivers was so small, in comparison with the volume of water, that it mattered little if this mode of disposal was made use of. But now, since the population of the State has so greatly increased, amounting to nearly six million people, and the sewage discharged into the rivers has become, in many places, excessive, thus polluting the water to a dangerous extent, the question is one of serious import to the public health. The object of the bill was to prevent so unwise and dangerous a custom, and the supervision and the execution of its provisions were intrusted to the State Board of Health. It was the further intention to gradually discontinue this practice in all cases, but one of the main objects was to vest authority in the proper body to deal summarily with all cases in which the public health was seriously jeopardized by pollution of streams used for drinking-water. It was deemed to be especially important to confer this authority at the present time, in view of the apprehended invasion of Asiatic cholera, and it must be looked upon as a serious misfortune that combinations of private interests throughout the State were strong enough to thwart and ultimately defeat the purpose of so valuable a health-protective measure.

The Quarantine Bill, which has been extensively discussed, though but little understood by the people, has, after improvement upon its original form, finally become a law. If any advantage is to be derived from this measure it consists in keeping open the Lazaretto Station throughout the entire year. This, undoubtedly, by the concentration of the work at one point, will be of advantage to the service and to the business community. The appointment of assistants to the Quarantine Physician is also an advantage, as, by the employment of additional officers, the work of inspection can be performed with greater facility. Further than this no advantage can be claimed for the measure. The transfer of the supervision of quarantine from a local board to a State board is simply a change from one set of officials to another. A change from a board which, from its position and duties, is in constant touch with all the interests involved, and presumably thoroughly conversant with the needs of the service, and having an advisory superintendence over quarantine affairs, to another board constituted anew and not having these advantages, whose duties, as prescribed, are more or less perfunctory, consisting mainly in the formulation of rules and regulations and the management and responsibility of the financial and business affairs of the station, does not appear, in our judgment, to be a public gain. An error seems to have been committed in not providing an adequate appropriation for conducting the station during the next two years, which may lead to serious embarrassment on account of the inability of the State Quarantine Board to procure assistance elsewhere in the event of an unexpected demand for money or material, a position in which the local board could not well be placed on account of the resources and support of the entire Department of Public Safety and of the City Administration, which could be counted upon in an emergency.

It is a matter of regret that some efficient legislation to prevent the sale of adulterated and impure milk was not enacted. The proposition to extend to the entire State the provisions of the law of 1885, now applicable to cities of the second and third classes only, encountered the strong opposition of the dealers in milk. Although a number of competent sanitarians believed the provisions of the bill to be wise, equitable, and advantageous to the public health, others considered the principle of applying volumetric analyses as a test for the purity of milk to be at fault, and the proposed requirements as to the volume of cream allowed to remain in skim milk to be excessively high. With this difference of professional opinion, and the apathy and general indifference of the public to sanitary legislation in general, it is not surprising that the bill failed to pass. The News trusts that members of the profession who have studied this subject will meet in conference and agree upon a proposal for legislation that will prevent the sale of contaminated, decomposed or decomposing or adulterated milk, while not branding skim milk as necessarily impure, and not attempting to establish by law a standard concerning which even experts express reasonable doubt.

Notwithstanding the failure of several of these bills to pass the Legislature, it is a matter of congratulation that sanitary legislation in the State has been advanced very considerably, and that most of the acts that have been passed are of the greatest importance and will enure to the welfare of the entire Commonwealth.

EDITORIAL COMMENTS.

The American Medical Association Meeting at Milwaukee. —The registration was 877—a number that compares favorably with that of other years. But it is only the busy professional man that appreciates the scientific interest that can gather so many from all parts of the country, from Maine to California, from Canada to the Gulf of Mexico, for a purpose having in it so little of self-interest. The medical politician and self-seeker, whom we always have with us, will not permit us to forget that more unworthy motives have had their part and power, but it continually becomes more manifest that the political schemers grow less and less powerful, whilst those who pursue professional and scientific ideals gain ever more in honor. To the latter come power unsought and respect unexpected, while the former must adopt methods that are progressively more and more like those of the ward politician. It is, indeed, a poor sort of "healer" that tends to become a "heeler." We may perhaps hope in vain, but hope we must, that those who secretly itch for future office may not unblushingly wheedle and scheme their personal friends into committees on nomination of "officers for the coming year."

Barring a single exception, Milwaukee was an ideal place to hold the meeting in. This exception refers to proximity of the Fair at Chicago. It was expected that the Fair would serve as an extra inducement in favor of attendance at the Milwaukee meeting. It was overlooked that it might also serve as a powerful counter-attraction. It has doubtless been true that instead of "coming early and staying late," too many came late and departed early. The paper once read, the "author" left for Chicago on the first train.

Beyond this, however, for which the Milwaukeeans are certainly not to be held responsible, the visiting members of the Association cannot help feeling the sincerest gratitude for the hospitable manner in which they were treated throughout the week. No touch of commercialism—at least, no knock-down blows, marred the spontaneity of the reception, or chilled the gratitude of the received. The visiting ladies were especially charmed by the combined delicacy and liberality of the attentions shown them and the foresight that planned their pleasure.

So much in these visits depends upon hotel comforts and courtesies that a word of warm thanks is certainly due the hosts who so well and perfectly served their guests. Conventions need not fear as regards the ability and capacity of the Milwaukee hotels to furnish most excellent hotel-homes.

The visit of Mr. and Mrs. Hart, of London, was the distinguishing characteristic of the meeting. Mrs. Hart charmed those who met her, and, catching her enthusiasm, everyone who came in contact with her will be stimulated to visit the Irish village at the Fair—the result of the noble devotion and many-year zeal of this delightful Lady Bountiful. Of Mr. Hart—we are, henceforth, all his firm friends. The address to medical editors on Monday evening was such a perfect example of easy eloquence, the playful smile of wit half-concealing and half-revealing the stern visage of serious truth and veteran advice, that everyone spontaneously voted him "a splendid fellow," and the most honored of the craft.

But it was especially the passionate earnestness and unanswerable logic of the address on cholera that showed everyone wherein lay the man's power—namely, in the life-long devotion to the health of the English and of all people, the founding of theory on indubitable fact, and the unflagging energy to bring municipalities, States, nations, to that recognition of the evil, of its cause, and of everybody's duty in regard to it, which shall result in the forefending of millions of deaths and of calamities beyond calculation. How long will the American people be in coming to a clear comprehension and determination of its duty as regards municipal and national sanitation? In this matter, as in so many similar cases, it is proved beyond all question that safety consists not only or chiefly in keeping disease out of our geographic boundaries, but in that condition and vigor of individual health that will resist disease or forbid its spread within. Cleanliness is health, and health is prophylaxis.

General satisfaction was expressed at the results of the Section-work. The attendance and interest manifested in the Sections on the Practice of Medicine and on Surgery and Anatomy were especially noteworthy. The final judgment of our readers must depend on the reading of the special telegraphic reports to THE NEWS, for which, we think, a claim for especial accuracy, fulness, and promptness is not unbecomingly immodest. All the Sections were able to complete their work by Friday morning, and in the afternoon the half dozen remaining north of Chicago visited the beautiful National Soldiers' Home, in the suburbs of the city.

As not infrequently happens, the robbed public comes by its own when the politician-bandits fall out in a division of the spoils. In the choice of Dr. Hibberd, of Indiana, as President of the Association there is cause for congratulation. A scholarly and philosophic mind, a modest and non-self-seeking character—the honor comes to him wholly unexpected and unschemed for. It is, too, a recognition of the proper respect due to general medicine, and of the danger that we shall too highly exalt the surgeon. It would be an injustice, of which, as a profession, we should be on our guard, to accept the popular estimate of the relative value to the community of the general practitioner and the surgeon.

"Will you go to San Francisco next year?"—was the general question when Dr. Parkinson's eloquence, that he, too, modestly thought so ineloquent, slowly moved the great audience from a feeling of decided disinclination to a feeling of happy, hearty enthusiasm. Most certainly we shall go, and, after twenty-three years, it is indeed genuine wisdom to accept the oft-refused invitation of the Pacific coast—an acceptance that it is now seen she had a right to claim, and, on our part, it was a duty to American medicine that the Association had no right to refuse.

Medical Journalism.—THE NEWS finds a source of congratulation in the prompt journalistic service it has been able to render in connection with the meetings of our national medical organizations. For instance, the issue of June 10th contained nearly ten pages of a telegraphic report of the proceedings of the American Medical Association, at Milwaukee. In addition, it presented the exceedingly interesting address of the President of the Association, Dr. Hunter McGuire.

THE NEWS has always considered itself a medical *newspaper*, and has, for many years, been particularly fortunate in obtaining the very earliest information in regard to events of interest and import in the medical world. The issues of the last few weeks contain fuller and more interesting reports of the recent important meetings in Washington, Buffalo, West Point, Detroit, and Milwaukee than, we think, can be found elsewhere It is intended that THE NEWS shall continue to maintain its present lead in contemporary medical journalism.

Spelling Reform.—Two years ago THE NEWS advised its contributors to adopt certain slight modifications of the ancient and musty methods of spelling some medical words, the chief of which were as regards such words as *hemorrhage*, *edema*, *anesthesia*, etc. At the meeting of American Medical Editors in Milwaukee, the editor of THE NEWS plead with his editorial colleagues to adopt these and a few similar changes. We record with much pleasure that the suggestions offered were received and accepted by the large gathering of editors present. Dr. Love, of St. Louis, enthusiastically urged the members to put in practice this shortened and simplified spelling, and by a unanimous vote the body agreed to do so. The reasons underlying the "reform" and the specific changes advised are given in an article published elsewhere. It

is a beginning, but one that may be made with ease, and it is already long past the time when some sort of spelling-reform were accepted and practised by medical men.

The Business of Medical Stenography. — Among the happy adaptions of business and mechanical devices and methods by medicine is one that has lately been made, and which is destined to be of much use to medical men in the future. In all of our large cities there is coming into existence and favor a class of medical stenographers. Even if papers are abstracted directly from the the original manuscripts, there yet remain the discussions—which, indeed, are often more valuable than the original contributions. But medical men have a double reason for making use of the stenographer-typewriter. It saves much valuable time of writers, of editors, and of secretaries, and it enables a writer to better systematize his thought and better shape it into literary presentableness. Our readers are much indebted to their co-workers and helpers in this branch, and we trust that physicians everywhere will give them the support they deserve. The medical stenographer must either be a medically-educated man, or he must have given patient and serious study to the strange words, and to what to the ordinary person is little more than "jargon." The work is one of those praiseworthy specializations of our highly differentiated modern life that we may avail ourselves of with excellent advantage to medicine. The time is probably coming when all manuscript desired for publication must be typewritten, and, from an editorial standpoint, we may fervently pray that that happy day may not be far off. Will not our contributors help to hasten it?

CORRESPONDENCE.

PAIN AND SHOCK.

To the Editor of THE MEDICAL NEWS.

SIR: To the layman there are few medico-lay topics, if I may coin the word, which are of more interest than the relative amount of pain felt by individuals and races. A great deal of writing, most of it sentimental, but part of it pseudo-scientific, assumes that the capacity to suffer pain exists with tolerable equality in the different ranges of life, after the nervous system is developed at all, and that in man pain has been felt equally at different historic periods, and in different races of the same period. A great deal of the discussion on the ameliorating consequences of the use of chloroform and ether has, for instance, as its assumed premise, the implied assertion that the subjects under the knife of Paré, at the battle of Pavia, were conscious of as much pain as the subjects on the operating table at Gettysburg.

It has occurred to me, perhaps wrongly, that the extent to which patients suffer from shock under surgical operations is a tolerably fair gauge of the measure of nervous disturbance created by the operation, and this in its turn is but another name for pain. I was familiar in childhood with the fact that missionary surgeons in Southeast Turkey paid little or no attention to shock in their operations, or, to be more accurate, I never heard any allusion to shock as a thing to be considered at all. Dr. Henry West, one of the most skilful and distinguished of the many men who have dedicated great ability to the obscure path of medical and surgical work at a missionary station (Livas, Turkey-in-Asia), I know, during a long experience, never found it necessary to pay any attention to shock in operations upon the natives. I venture to think that the following letter on the subject, which I have received from Dr. V. M. B. Thom, who has established a hospital in Mardin, Turkey, may be of interest to members of the profession in this country, as throwing light on the subject of which I have just spoken.

May I add that Dr. Thom has established the beginnings of a medical school in connection with his hospital, and that any gifts of instruments, of books, and still more of pecuniary aid, will be of the utmost service in the work of this hospital and school, one of the great difficulties of the missionary medical teacher being the extreme poverty of those whom he is endeavoring to train, which prevents them from providing themselves with even the smallest appliances. There are many instruments laid aside for better inventions that might be given a useful term of service on missionary ground if they were contributed for this purpose.

Dr. Thom, after alluding to a question of mine on the subject, says:

"I had forgotten that shock was such a formidable enemy to operations in America. In all my operations in Turkey I do not recall an instance where I had any unfavorable results from shock, and I have had patients on the table for two hours or more, submitting to very trying operations, having all ages, from the year-or-two-old child to the threescore-and-ten or more.

"This winter I removed a very extensive cancer from the breast of a woman that would have been looked upon at home as delicate—not only the loss of an extensive amount of flesh, the loss of blood, and a very great strain upon the system in bringing the edges of the wound together, and retaining them there, and yet we had not the indication of shock. Only recently I was called to a case of labor which had been three days in pain. It was an arm presentation, with a narrow pelvis. It was impossible to deliver the child until I dismembered it, and being dead before I called, I had less compunctions in doing so. Yet the woman showed no evidence of shock. Time and again young brides, of from thirteen to fourteen years of age, will be in labor with their first child from three to five days, until they are all exhausted and worn out, but not an indication of shock. As to exercising any precautions after the operations in putting them to bed, with warm applications to keep up the circulation, or giving internal stimulants, hypodermatic or otherwise, I have never once had to do it."

Respectfully,

TALCOTT WILLIAMS.

Unusual Finding in a Dermoid Cyst.—At a recent meeting of the New York Obstetrical Society, DR. R. L. DICKINSON (*New York Journal of Gynecology and Obstetrics*, vol. iii, No. 5, p. 421) presented quite a complete superior maxillary bone, in which the sixteen teeth were nearly all in place when removed from a dermoid cyst fixed behind the uterus, and the other contents of which had become almost entirely absorbed.

SOCIETY PROCEEDINGS.

AMERICAN MEDICAL ASSOCIATION.

Forty-fourth Annual Meeting, held at Milwaukee, Wis., June 6, 7, 8, and 9, 1893.

(Continued from page 652.)

GENERAL SESSION.

THIRD DAY—JUNE 8TH.

MR. ERNEST HART, of London, delivered an address entitled "Cholera, an Exclusively Water-borne Disease." He said that cholera is no longer a disease beyond control. Cholera is a filth-disease, carried by dirty people to dirty places, and spread by dirty or impure water. There is nothing mysterious about the advent of cholera, and most of the incidents of its diffusion are known. Quarantine may be considered as a tribute that dirt pays to cleanliness. Cholera comes from India, and India only; although it sometimes hibernates in Europe. It has two routes: one across the Caucasus to the Baltic ports, and thence, either directly or through Hamburg, westward. The other route is from Mecca by pilgrim caravans or by boat *via* Alexandria to Europe. Last year's epidemic originated in Cashmere and was brought to Hamburg within five months. All mysterious talk of transmission of the disease by atmospheric currents belongs to a past period. It used to be said that thunder is mysterious, and it is just as reasonable to talk of cholera being mysterious. It is still a common popular notion that cholera comes by Providence and goes by drugs. This is the precise opposite of the truth. Cholera is a man-created disease, and drugs are, comparatively speaking, powerless against it. The war against cholera is the war of cleanliness against filth; and the one kind of cleanliness that is absolutely essential, and in the face of which cholera cannot spread or become epidemic, is purity of the drinking-water. No community can have the disease that does not invite it by the habitual contamination of its water-supply. Fumigation, railroad quarantines, libations, and sprinklings with antiseptic powders and fluids are vain ceremonies—mere sacrifices to the popular ignorance and prejudice. They create a false sense of security and detract attention from the only important agent of safety, namely, purification of soil, air, and water; but, above all things, purity of water. When the people insist on municipalities and corporations giving them pure water, cholera will become extinct and its terrors a mere recollection. The latest results of microscopic examination and bacteriologic research confirm the vast mass existing of statistical data, while clinically it has been shown that there has never been an outbreak of cholera in Europe that could not be traced to the distribution of an infected water-supply.

DR. HENRY H. MUDD, of St. Louis, delivered the Annual Address on Surgery. His subject was entitled "Surgical Problems." He said that surgical cleanliness has taught that drainage is not essential to the rapid healing of grave and extensive wounds. This advance has clearly defined a marked difference in the object to be obtained by primary and secondary drainage. No intelligent surgeon is ready to discard the use of secondary drainage in suppurating wounds; but there are many who assert that they do not use it in fresh, clean wounds, no matter how extensive they may be. The interest in the controversy has been narrowed down to the use or abuse of drainage in operative wounds that are clean and aseptic. It must be awarded a new place now, when perfect cleanliness is supposed to accompany every fresh wound. It was not thought that the drainage-tube can be dispensed with in all so-called clean wounds. Antiseptic surgeons assert that every operative wound can be made aseptic, and by a proper technique union by first intention can be secured. The conditions to be fulfilled to attain this end with a patient in fair general condition are an incised wound, thorough hemostasis, perfect approximation, and immobilization of wounded surfaces.

Another problem is the possibility of securing the permanent surgical relief of hernia. A permanent cure is established in many cases in children by the restraining influence of a truss. In individual cases in which permanent retention of the herniated viscus is thus possible during childhood, it should be given a full trial before resort to operative measures, as these are still uncertain in their results. The cure of hernia in adults by truss-wearing is an improbable event, and should not influence the decision against operative relief. Permanent recovery follows operative effort in from 60 to 80 per cent. of the cases. Even the lower percentage justifies continued operative effort.

The treatment of appendicitis is still an open question. The care of the individual case offers a choice of lines of treatment that make a decision most difficult. The anatomic and clinical investigations of the past few years have clearly demonstrated that the American idea of the pathology of inflammations in this region is the correct one.

Dr. C. H. Hughes, of St. Louis, was selected to read the Address on Medicine at the next meeting; Dr. Ernest Laplace, of Philadelphia, to read the Address on Surgery; Dr. George H. Rohé, of Catonsville, Md. to read the Address on State Medicine.

Dr. R. H. Plummer was selected as Chairman of the Committee of Arrangements.

The Nominating Committee also recommended, and the recommendation was adopted, that the Secretary be paid an annual salary of $500.

The report of the Committee on President's Address was then read by Dr. Hibberd, indorsing, in the form of resolutions, all of the suggestions contained therein. On motion, the report was adopted.

On motion of Secretary Atkinson, several Canadian physicians were made members by invitation.

Dr. John B. Roberts, of Philadelphia, offered a resolution to the effect that all amendments now on the calendar be postponed until the meeting next year, to be taken up on the second day of the Association meeting in general session. Carried.

FOURTH DAY—JUNE 9TH.

DR. WALTER WYMAN, of Washington, D. C., read the Address on State Medicine. His subject was "The Extinction of Contagious Diseases." The history of the world shows that whole races of men and other animals have become extinct. Why, then, should not races of

microbes become extinct, and certain diseases that once ravaged the earth in epidemic form have so lost their inherent strength or have been so controlled in the latter part of the nineteenth century as to warrant the belief that their histories are closed, or fast closing. Thus the active period in the history of yellow fever was from 1793 to 1805. In the past the disease has been of common occurrence in Europe, the ports of Spain in particular suffering severely between 1801 and 1825, but there has been no disastrous epidemic in Europe since that of Lisbon, in 1857. The earlier history of yellow fever in the United States includes invasion not only of the South, but of posts as far north as Pennsylvania, New Jersey, New York, and even New Hampshire; but to-day, though constant vigilance against its introduction is necessary, it has practically vanished from the ports of the United States.

Since the discovery of vaccination by Jenner, in 1796, smallpox, though still a stubborn foe, no longer devastates without restraint. It is now simply a matter of choice whether or not one shall be made absolutely proof against the disease. The good effects of a compulsory law regarding vaccination are to be seen in the statistics of Prussia, in which country for six years prior to the enforcement of vaccination, the deaths from smallpox averaged 85 per 100,000 of the inhabitants, while from 1875 to 1886, after the law came into force, the yearly average was but 2 per 100,000.

Typhus fever flourishes to-day in certain parts of Mexico, and is occasionally reported from the Old World. It has always been a menace when large numbers of people were crowded together amid unsanitary surroundings; but it has no permanent lodgment in the United States. The energetic and successful measures instituted by the Board of Health of New York during the past winter to suppress this disease, although it appeared in a section of the city more densely populated than any other in the world, afford a striking example of what may be accomplished by proper laws, energetic execution, and scientific disinfection.

The history of the past few years has demonstrated most clearly the relation between cholera and filth and contaminated food and water, conditions that are likely to be overcome by the peculiar energy and love of cleanliness characteristic of the Anglo-Saxon race. In recent years the superior sanitation of England, and the more perfect quarantine surveillance of the United States, have served to protect these two nations from this exotic disease. One possible agency in the elimination of diseases of this class is protective inoculation, which though still young as a science, is not without promise. Whatever opinion may be held of Freire's inoculations for yellow fever, and Kitasato's and Haffkine's inoculations for cholera, the investigations of these and other bacteriologists in this particular field warrant the hope that results will be attained equal in efficiency to vaccination for variola.

The Permanent Secretary read an invitation from the American Pharmaceutical Association to send delegates to their meeting at Chicago, August 14, 1893.

The Permanent Secretary presented from the General Business Committee the following resolutions, which had been adopted by the Committee, and were submitted for the approval of the Association:

Resolved, That no paper shall be read by title in any Section which is not actually in the hands of the officers of the Section, and that the Secretary of the Association be instructed to communicate this action to each Section.

Resolved, That the General Business Committee hereby requests the officers of Sections to communicate to this Business Committee any general resolutions passed relating to the conduct of the Sections.

Resolved, That we recommend that the Treasurer and Committee on Arrangements adopt measures to secure by courteous circular letters as large a registration of members as possible by mail three or four weeks before each annual meeting. Also, that one month after the annual meeting each member who has not paid his annual dues be sent a notice that dues have not been paid, and that he be requested to remit the same; further, that similar notice be sent at each of the two succeeding months to those who do not remit; and that those who still fail to remit be drawn on at sight at the beginning of the next month, having been notified that they would thus be drawn on at the time specified.

Unanimously adopted.

From the Section of Materia Medica and Pharmacy, a resolution was offered and adopted to the effect that the American Medical Association recommend that the next edition of the *United States Pharmacopeia*, soon to be issued, be at once practically adopted by physicians in prescribing and pharmacists in compounding. It also advises the general adoption by physicians and pharmacists of the *National Formulary* issued by the American Pharmaceutical Association, and that the teaching medical and pharmaceutical colleges adopt these works as text-books.

DR. J. E. BOYLAN offered the following amendment to By-law No. 11, relating to Sections. The first clause of paragraph 5 shall be amended to read:

"It shall be the duty of every member of the Association who proposes to present a paper or report to any one of the Sections, to forward either the paper or a title indicative of its contents, and its length, to the Secretary of said Section, at least one month before the annual meeting at which the paper or report is to be read."

Adopted.

A communication from Dr. J. M. Toner, of the Committee on Jenner Centennial, reported progress, and asked permission to fill a vacancy in the committee, owing to the death of Dr. T. F. Wood, of North Carolina.

The report was received and the permisssion granted.

The President announced the delegates to the Eleventh International Medical Congress at Rome, and also a delegate to the American Pharmaceutical Association in the person of Dr. Frank Woodbury, of Philadelphia.

On motion, the President and Permanent Secretary were granted authority to appoint other delegates, if deemed desirable.

The President appointed as the committee to confer with the American Public Health Association, U. O. B. Wingate, of Milwaukee; Jerome Cochran, of Alabama, and J. H. Parkinson, of California.

Dr. Robert Reyburn, of Washington, D. C., offered resolutions of thanks, which were unanimously adopted.

Dr. James T. Jelks resigned from the Judicial Council, because he is already a member of the General Business Committee.

On motion, the resignation was accepted.

President McGuire, in retiring, thanked the Association for the kind treatment extended him and the Permanent Secretary and others who had aided him so efficiently. He then introduced Dr. J. F. Hibberd, of Richmond, Ind., the President-elect, who assumed the chair in a felicitous manner, asking all to go to California next year, and in every way to aid in building up the Association.

There being no further business, the Association adjourned to meet in San Francisco, Cal., on the first Tuesday in May, 1894.

SECTION ON SURGERY AND ANATOMY.

THIRD DAY—JUNE 8TH.

DR. F. C. SCHAEFFER, of Chicago, read a paper upon "Brain Surgery." He reported eight cases, which demonstrated the importance of carefully examining every case of injury and of prompt surgical intervention in all instances in which a fracture is detected, even if there be no symptoms indicating intra-cranial involvement. In one case, in a man fifty years of age, in which there was most extensive fracture of the anterior fossa of the skull and of the frontal bone, the patient walked a distance of a mile to his home. When first seen there were no symptoms whatever of any cerebral disturbance. As the wound involved the frontal sinus, it could not be determined that the injury had fractured the internal table. Although operation was advised on general principles, as the family refused, it was not pressed, and the wound was treated antiseptically.

DR. E. L. SHURLY, of Detroit, Mich., read an article entitled "Artificial Opening of Pulmonary Cavities; Insertion of Rubber Tube and Injection of Chlorin Gas." He said that, although pulmonary cavities have been opened artificially occasionally since 1847, the procedure has only recently been recognized as a justifiable one. Dr. Shurley proposes the additional injection of diluted chlorin gas into the cavities at intervals of three or four days, at least. The gas is obtained by half filling a Wolff bottle with fresh chlorin water and forcing air through this into the pulmonary cavity. Gaseous substances should be used in preference to fluids, as the former penetrate the pulmonary substance better, are not irritating, and do not produce cough. Of all gaseous bodies, Dr. Shurley prefers chlorin.

DR. J. MCFADDEN GASTON, of Atlanta, Ga., read a paper entitled "The Present Status of Thoracic Surgery." The following general inferences were held to be justifiable:

1. All penetrating wounds of the thorax may be closed hermetically by suture after allowing the discharge of fluid blood from the opening.

2. Foreign bodies lodged in the bronchi may be removed by incision of the trachea at the lowest available point.

3. Experiments for reaching the bronchi through the chest-wall afford little encouragement in undertaking operation upon the human subject.

4. Medication as a preventive and curative agency in pleuritic effusion is worthy of trial before recourse to operation.

5. Aspiration is indicated when there are large serous accumulations, and likewise in pneumothorax, but cannot be relied upon for the relief of purulent collections.

6. Partial resection of ribs is attended with better results in some cases of empyema than the complete removal of the segments of several ribs.

7. The excision of a small portion of one rib, with the introduction of drainage-tubes, has been generally attended with good results.

8. Washing out the cavity of the chest is not requisite, except in case of contamination and decomposition of the contents.

9. The operation of thoracotomy for abscess and gangrene of the lung should be accompanied with antiseptic applications and with gauze tamponage.

10. Tumors of the mediastinum admit of interference, but further improvements are requisite.

DR. WILLIAM L. RODMAN, of Louisville, Ky., read an exhaustive paper on "Tumors of the Neck." The various cysts of the neck were considered. Of these, those connected with the thyroid gland are quite common. In the treatment of these, Kocher recommends partial excision of the gland. Total excision leads to the cachexia strumipriva. In 18 cases of total extirpation observed by Kocher, but 2 failed to develop the cachexia; while of 28 partial excisions, none exhibited any untoward after-effects.

Lymphomata are by far the most frequently observed tumors of the neck. Of malignant disease, sarcoma is more common than carcinoma. Sarcoma of the neck, unless seen early, does not seem to offer satisfactory conditions for operation. The growth is vascular, the attachments many, and the danger of recurrence great.

Tuberculosis of the glands of the neck is exceedingly common. The submaxillary glands are almost invariably the first affected. The infection spreads through the lymphatics and involves other glands. It was recommended to remove such glands in every case, as they may lead to general infection, an event that does occur in at least one case in eight.

DR. MACLEAN, of Detroit, prefers the tapping of hydroceles of the neck and injecting with iodin, as in hydrocele of the tunica vaginalis testis.

DR. MUDD, of St. Louis, agreed with Dr. Rodman in preferring excision of cysts of the neck unless there be some valid contra-indication.

DR. JOSEPH PRICE, of Philadelphia, read a paper on "The Relative Merit of the Present Methods of Treating Pyelo-nephrosis." He said that when the patient cannot stand a prolonged operation, incision and drainage should be employed. If there remains any secreting structure of the kidney, it is well to perform nephrotomy, as the possibility of a horseshoe kidney should be borne in mind. In this event, removal would result in speedy death from uremia. In the surgery of the kidney, as elsewhere, the simplest procedure that will meet the indications should be employed.

Dr. Price related that he had performed incision, irrigation, and drainage in seven cases without a death.

DR. WELLER VAN HOOK, of Chicago, presented a very valuable paper on "The Surgery of the Ureter." The fact that the ureter is sometimes injured during abdominal and pelvic operations led the author to devise a means of uniting the divided ends. One end is ligated,

a longitudinal incision made above the ligature, and, by means of two threads, the other end is invaginated into the longitudinal incision. The opposed portions are carefully united, and, if desired, covered with a flap of peritoneum to make the union more perfect.

It is recommended, when it is desired to implant the ureter in the bladder, that the ureter be first stitched in the abdominal wound, and later, the bladder stitched as high as possible in the abdomen; and when adhesions have become firm, the ureter may be implanted in the bladder, with considerable hope of entire success. This necessitates three sittings to complete the operation, but the results would seem to justify the method.

Dr. Hook objects to implantation of the ureter into the rectum. Among other objections are the occurrence of ureteritis and pyelitis.

The extra-peritoneal or retro-peritoneal method of attacking the ureter is recommended when possible. The following general considerations were presented:

The extra-pelvic portion of the ureter is most readily and safely accessible for exploration and surgical treatment by the retro-peritoneal route; hence all operations upon the ureters above the crossing of the iliac arteries should be performed extra-peritoneally, except in those cases in which the necessity for the ureteral operation arises during celiotomy. The intra-pelvic portion may be reached by incision through the ventral wall, the bladder, the rectum, the vagina in the female, or the perineum in the male. The ureter is not only exceptionally well protected from injury, but by its elasticity and toughness resists violence to a remarkable degree. The histology of the ureters furnishes most favorable conditions for the healing of wounds. Longitudinal wounds of the ureter at any point heal without difficulty, in the absence of septic processes and under the influence of ample drainage. In all injuries, when the urine has been septic before operation, or when the wound is infected during the operation, drainage must be effected posteriorly. The chemical composition and the reaction of the urine should be studied in all injuries of the ureter, the urine being rendered acid, if possible, and the specific gravity kept low. The pelvis of the ureter is, *cæteris paribus*, the most favorable site for wounds of the ureter, as scar-contraction is not likely there to be productive of ill-results. In aseptic longitudinal wounds of the ureter, occurring in the course of celiotomy, suture may be practised, as recommended by Tuffier, and the peritoneum protected by suture. Transverse wounds of the ureter involving less than one-third of the entire circumference of the duct should be treated by free extra-peritoneal drainage, and not by suture. In transverse injuries in the continuity of the ureter involving more than one-third of the circumference of the duct, stricture by subsequent scar-contraction should be anticipated by converting the transverse into a longitudinal wound and introducing longitudinal sutures. In complete transverse wounds of the ureter at the pelvis, sutures may be used if the line of union be made as great as possible. In complete transverse injuries of the ureter in continuity, union should not be attempted by suture. In complete transverse injuries of the ureter in continuity, union with subsequent scar-contraction may be obtained by lateral implantation as described. In complete transverse injuries of the ureter very close to the bladder, the duct may be implanted, but with less advantage, into the bladder directly.

In transverse injuries of the ureter with loss of substance, the following conclusions were formulated: At the pelvis of the ureter, continuity may be restored by Küster's method of suture, provided the severed ends can be approximated. Rydygier's method of ureteroplasty in such injuries should be tried, if sutures cannot be utilized. The primary operation should at least fix the ends of the tube as nearly together as possible. In both trans-peritoneal and retro-peritoneal operations the urethral ends can be approximated, even after the loss of about an inch of substance. The use of tubes of glass and other materials for the production of channels, to do duty in place of destroyed ureteral substance, is rarely successful, and even if temporarily successful the new duct is almost sure to be choked by scar-contraction. The implantation of the cut ends of a ureter into an isolated knuckle of bowel is objectionable: (1) because the bowel is not aseptic; (2) because the operation is dangerous. In injuries of the portion of the ureter within the pelvis, with loss of substance, the ureter should be treated as follows: If possible the continuity of the ureter should be restored by lateral implantation. If this is not possible, the ureter in vaginal operations, particularly in vaginal hysterectomy, should be sutured to the base of the bladder, with a view of a future vesical implantation or formation of a vesico-vaginal fistula with kolpokleisis. In injuries to the pelvic ureter during celiotomy, when the continuity cannot be restored, and when vesical or vaginal implantation cannot be effected in the female, or vesical implantation in the male, the proximal extremity of the duct should be fastened to the skin, at the nearest point to the bladder arch. In such cases, as well as in ventral ureteral fistulæ due to other causes, the bladder may be distended and sutured to the abdominal peritoneum and muscles as high as possible, and at a second operation the ureter may be implanted extra-peritoneally into the bladder. If the ureter will not reach the bladder, a flap of bladder-wall may be cut out extra-peritoneally and reflected upward to meet the ureter and form a tube. It is legitimate under such circumstances to try Rydygier's method.

Implantation of one or both ureters into the rectum is absolutely unjustifiable under all circumstances, because: *a*, the primary risk is too great; *b*, there is great liability to stenosis at the point of implantation; *c*, suppurative uretero-pyelo-nephritis is almost absolutely certain to occur. Ligation of the ureter to cause atrophy of the kidney is unjustifiable. Extirpation of a normal kidney for injury or disease of the ureter is absolutely unjustifiable, except when the ureter cannot be restored in one or other of the many ways cited.

DR. HENRY O. MARCY, of Boston, read an "Analysis of One Hundred and Twenty-five Cases of Hernia Operated on for the Purpose of Radical Cure." The paper was an addition to former communications by Dr. Marcy on the same subject. A continued experience and observation have confirmed the opinion formed many years ago that the army of truss-bearing sufferers will constantly grow less and less as cases of hernia are subjected to proper operative procedures. The mortality of radical operations for hernia in good hands is very small, and the proportion of cures is very creditable.

DR. DONALD MACLEAN, of Detroit, reported two cases of "Traumatic Aneurism of the Common Femoral Artery, with Ligature of the External Arteries." On account of the position of the aneurism, and the numerous and important branches that the femoral artery gives off, Dr. Maclean departed from the treatment generally followed and ligated the external iliac artery, with recovery in both cases.

DR. D. J. HAYES, of Milwaukee, related two cases in which he had operated for "The Establishment and Maintenance of a Urethra above the Symphysis Pubis in Chronic Prostatic Obstruction." The operation, first advised for this condition by Dr. Hunter McGuire, is to be strongly recommended on account of the ease of its performance, and the very satisfactory results. One patient was exhibited. He could retain his urine for from four to five hours, and was attending to business. Dr. McGuire has performed supra-pubic cystotomy for prostatic obstruction in over ninety cases, with but two deaths, and in both of these instances there was preëxisting pyelitis.

DR. H. C. DALTON, of St. Louis, read a contribution on "Three Cases of Traumatic Rupture of the Small Intestine, with Early Operation." One case died. In this instance operation was delayed too long. Both of the other cases recovered satisfactorily. The deduction drawn from the report was that in these cases immediate operation is necessary.

DR. HOWARD A. KELLY, of Baltimore, made some interesting remarks upon "Ureterectomy," upon which subject he has recently done so much original work. Numerous photographs were exhibited, showing the incision and various steps of the operation. The term ureterectomy is employed to indicate total or considerable extirpation of the ureter. The operation becomes necessary in cases of malignant disease and other conditions. The ureter may be reached in any one of many ways. Dr. Kelly operates with the patient lying on the side opposite that on which the operation is to be performed.

DR. LINK, of Indiana, showed specimens exhibiting the formation of bone after the periosteum has been destroyed.

DR. J. N. QUIMBY, of New Jersey, reported the case of a boy in which, a few hours after receiving a blow upon the head by a stone, convulsions supervened. After consultation it was decided to trephine. There was so little disturbance of the external table that trephining was almost abandoned, but a button of bone was removed and the internal table was found much depressed and splintered. Recovery was complete and permanent.

FOURTH DAY—JUNE 9TH.

DR. ALEXANDER DALLAS, of New York City, read a paper on "A New Treatment of Hernia." He has devised a new form of truss, consisting of a covered steel spring, which is adapted to the body over the iliac crests, the anterior arm descending almost vertically and covering the entire inguinal canal. The advantages claimed for this appliance are perfect retention with the least pressure, comfort in wearing, and stability in proper position.

For the cure of hernia, Dr. Dallas has devised an instrument which is passed through a small cutaneous incision over the external ring into the abdomen, and, by means of a screw, a toothed surface is protruded, the canal freshened, and the instrument withdrawn. The external opening is closed with iodoform-collodion; a truss is worn for three weeks, and then removed.

In cases of strangulated hernia it was recommended to employ hypodermatic injections of morphine and atropine about the hernia every fifteen minutes until the patient is comfortable. Operation, if finally necessary, may be performed under morphine-narcosis.

For the radical cure, a modification of Macewen's operation was advised.

DR. ERNEST T. TAPPEY, of Detroit, reported "A Case of Successful End-to-end Suturing of Intestine." When the patient, a man of forty years, with a strangulated hernia for five days, first came under observation, the sac and hernia were gangrenous. The sac had already been opened by a physician. One week after admission, when a line of demarcation had formed between healthy and unhealthy tissue, the adhesions were separated, a fresh section made, and end-to-end approximation of the bowel performed and maintained by suture of the mesentery, mucous membrane, and, finally, of the serous surface. The external wound was packed with gauze. Recovery was complete without complication.

"A New Applicator for Introducing Medicaments into the Urethra, Uterus, and Rectum" was described by DR. A. B. KIRKPATRICK, of Philadelphia. The instrument is made of aluminum, silver, or hard rubber, and consists of a cylinder about eight inches long, with an accurately adjusted piston. The desired amount of powder is taken up into the cylinder, and the oiled instrument is passed into the urethra or uterus to the proper distance, when the pencil of powder is projected by the piston.

In acute gonorrhea, Dr. Kirkpatrick has found a powder of iodoform, boric acid, morphine, and atropine, introduced by this applicator, almost a specific.

DR. JOSEPH B. BACON, of Chicago, Ill., described "A New Method of Treatment for Strictures of the Rectum." The operation consists in performing celiotomy in the Trendelenburg position. The rectum is exposed and the male half of the Murphy button is introduced into the sigmoid end, and the female half introduced on a staff through the anus and to the proper position in the rectum, an anastomosis thus being made around the strictured portion. If the stricture is less than two inches from the rectum, it is necessary to remove the coccyx in order to reach the seat of trouble. In applying the button, the portion in the sigmoid is sutured, but in the rectal half, a small opening is made in the bowel-wall, and the cylinder crowded through and the button clamped.

DR. VERRITY, of Chicago, read a contribution on "Compound Fractures of the Skull," illustrated by drawings. It was recommended to trephine compound fissured fractures, even without depression or without symptoms, for the purpose of providing drainage in case of infection, and of examining the inner table.

DR. EDWARD A. TRACEY, of Boston, Mass., described "A New Material for Surgical Splints and Jackets, and a Method of Applying It." The material employed is wood-pulp. It is prepared in sheets, and from these suitable patterns are cut. These are made pliable by

being moistened, and are then applied, being secured by a roller-bandage. After a few minutes the splint is removed and allowed to dry. As a hardening material potassium silicate suits best. A solution of dextrin also answers well.

SECTION ON PRACTICE OF MEDICINE.

THIRD DAY—JUNE 8TH.

DR. H. D. DIDAMA, of Syracuse, N. Y., reported some "Brief Clinical Memoranda." *a.* He stated that saliva is an excellent substitute for olive oil, glycerin, cosmolin, or other substance, as a lubricant for catheters. Although containing bacteria, saliva is not septic, and is always at hand. *b.* In preparing hemorrhoids for injection he anesthetizes by means of ether or the A. C. E. mixture, and follows by digital dilatation of the anus. He then brings down the hemorrhoids, ligates those with small pedicles, tying with a bow-knot, and then injects the material to be used. *c.* He recommends the following facile reduction of prolapsed hemorrhoids: The patient is placed on his back, with his knees drawn up. Cocaine is applied to the hemorrhoids, if tender. These are then thoroughly lubricated with vaselin, and with the tips of two or three fingers pressed up while the patient at the same time is directed to bear down. The hemorrhoids readily slip up into the bowel. The patient himself can perform this operation without the aid of a second person. *d.* For the ready relief of lumbago, Dr. Didama has for ten years or more employed large dry cups over the entire lumbar region. Four cups are applied at once and the application is repeated. In fifteen minutes the pain is entirely gone. The relief is usually not only prompt, but also lasting. The blood is drawn from the painful muscles to the surface, and relief is afforded. The cups should be three inches in diameter and six inches deep. A tonic and alkaline diuretic may be given.

DR. BILLINGS, of Chicago, said that in the use of saliva as a lubricant the patient is in constant danger of infection. While always containing non-pathogenic bacteria, the saliva frequently contains pathogenic and pyogenic bacteria also.

DR. DENISON, of Denver, called attention to the danger of transmitting tuberculosis by the saliva used as a lubricant, as the saliva frequently contains tubercle-bacilli.

DR. AULDE, of Philadelphia, emphasized the rheumatic origin of lumbago, and suggested the use of potassium iodid, and the salicylates, as well as the faradic current. He said that rhux toxicodendron is also of value in the affection.

DR. MACLEAN, of Detroit, reported a case of supposed appendicitis that had ruptured through the lung.

DR. JOSEPH PRICE said that appendicitis is one of the most troublesome conditions met with by gynecologists and abdominal surgeons. He believes the condition purely a surgical one and advises operation in every instance. The removal of the appendix in the intervals between the attacks is followed by a mortality of almost *nil*. The application of poultices and the administration of opiates are objectionable. In almost every case the adhesions are extensive, though in some very exceptional cases there are none.

DR. WHITTAKER, of Cincinnati, said that he prefers the word typhlitis to appendicitis, and asserted that no physician would object to operation in cases in which ulceration is present. As some cases of typhlitis never have a relapse, it would be improper to operate whenever the patient complained of pain in the region of the appendix. The continually recurring cases should pass into the hands of surgeons.

DR. J. HOFFMAN, of Philadelphia, said that of 18,000 cases with disease in the right iliac region in the German hospitals there was disease of the appendix in 91 per cent., and only 9 per cent. could be classed as typhlitis. He admitted the possibility of a case getting well without treatment, either medical or surgical, but under such circumstances the convalescence is prolonged.

DR. MCMURTRY, of Louisville, stated that many cases of appendicitis are reported in the mortality lists as peritonitis, especially those occurring in males. Peritonitis is only a symptom, and usually of appendicitis.

DR. J. B. MURFREE, of Murfreesboro, Tenn., read a paper on "Diphtheria." He said that the greatest number of cases occur between the ages of three and twelve, and but very few in infants. The disease may be transmitted by cows. The period of incubation is from two to five days. The severity of the disease is the greatest at the height of the epidemic, but the intensity of the fever bears no relation to the degree of the toxemia. The pulse is usually feeble and small. The prognosis is always unfavorable. In treatment, few remedies are of much avail and none is specific. Isolation and disinfection must be absolute. Antiseptic mouth-washes; astringent gargles; the swallowing of ice, pepsin, trypsin, etc., to destroy the membranes; tincture of ferric chlorid for the blood; mercuric or mercurous chlorid; alcoholic stimulants, especially large and frequent doses of whiskey, constitute a useful method of treatment.

DR. JENKINS, of Iowa, stated that he applies topically, with absorbent cotton, a solution of ferric sulphate.

DR. E. J. C. MINARD, of Brooklyn, N. Y., read a paper on "Early Aspiration in Acute Pleuritis. It was stated that the diagnosis of the condition is not always easy. Early aspiration was advised, with thorough asepsis.

DR. ANDERS, of Philadelphia, stated that he regards the exudate of acute pleuritis as an inflammatory one, and only operates during the stage of febrile reaction when urgent symptoms appear, and then promptly. If, after the fever and pain are controlled the effusion does not become absorbed, he does not wait longer than a week or ten days, but removes the exudate by aspiration, withdrawing small amounts at a time, in order to avoid dangerous sequelæ. This is repeated every couple of days, until the tendency to recurrence is overcome. Sudden syncope may follow the removal of a large amount of fluid.

DR. CHARLES W. PURDY, of Chicago, read a paper on "The Detection and Significance of Carbohydrates in the Urine." He confined his remarks mainly to the consideration of glycosuria, for the quantitative determination of which he proposed a new test.

The test solution consists of copper sulphate, 48 grains; pure potassic hydrate, 144 grains; strong ammonia, U. S. P., 9 ounces; glycerin, 6 drams; distilled water to 20 ounces. It was said to be stable and reliable. Some of the blue solution is placed in a vessel and the

urine is dropped in from a buret, until the blue color disappears, when the amount of sugar present may be estimated.

In the discussion of the Brand method of treating typhoid fever, DR. CHR. SIHLER, of Cleveland, insisted that the cold-water treatment of typhoid fever can, should, and will be carried out in private practice. Over five thousand baths have been given under his supervision without difficulty. The objections are: (1) That it is not pleasant to the patient; still patients are usually willing to undergo the discomfort in order to increase their chances for life. (2) Four out of five of our patients will get well without it. The bath can readily be given by a member of the family, although it is better given by a trained nurse. Dr. Sihler has a tub five and three-fourths feet long, two feet wide, and sixteen inches deep. The temperature of the first bath is 88°, cold being applied to the head and friction being employed. The second bath is given at a temperature of 84°, and successive baths at 80°, 76°, and down to 68°. The temperature should be taken every half-hour after the bath. If the patient is chilled, he should be wrapped in a blanket and have hot bottles applied to the feet. Dr. Sihler regards the chill as beneficial rather than otherwise. He uses less alcohol as his experience with the bath grows.

DR. W. G. THOMPSON, of New York City, reported that he had treated 95 patients in three years by the Brand method, with a mortality of 7½ per cent. In 1305 cases treated by the expectant method, the mortality was from 20 to 30 per cent. In the French and German hospitals the mortality has, under the Brand method, been reduced to below 2 per cent. A patient with a temperature of 102° F. is given half an ounce of whiskey, and is put into the bath for fifteen minutes, being rubbed at the same time. He is then lifted into his bed, rubbed dry, and given a glass of milk. For a young child or weak adult a bath of ten minutes is better. Often three or four baths *per diem* will suffice, but in bad cases a bath should be given ever three hours, day and night. For a nervous patient the initial bath may have a temperature of 90°. The temperature often continues falling after the bath. The occurrence of menstruation need not contra-indicate the treatment, and in one instance a patient was five months pregnant, and yet was given forty baths. A characteristic result of the treatment is the absence of nervous symptoms. The patient should void urine before entering the tub; otherwise he will be likely to urinate during the bath.

DR. HERRICK, of Chicago, said that within the past five years he had seen nearly one thousand cases of typhoid fever in hospital and private practice. He has observed that the pulse is invariably slow, notwithstanding the high temperature, and the average is from five to fifteen beats higher per minute in women than in men. A pulse over 106 in a male will require careful watching, and one of great irregularity is of bad omen. A slow pulse in typhoid fever is as characteristic as a rapid pulse in scarlet fever. Bradycardia is common in convalescence.

In Dr. Herrick's experience sweating is usually not present until late in the disease. In one case the eruption appeared on the face and over the entire body. In 20 per cent. of the cases severe epistaxis was an early symptom. The temperature in the early days of the disease is very intractable. Pain in the abdomen is not a rare occurrence, and may suggest peritonitis. Albuminuria is common, as is Ehrlich's reaction, but the diagnostic significance of the latter is doubtful. Less mental disturbance follows intestinal antisepsis than other methods of treatment. Absolute rest in the recumbent posture is insisted upon, with liquid diet, sponging with cold, tepid, or warm water, antipyretics in small doses; opium for hemorrhage; surgery for perforation. The mortality in hospital practice was 17 or 18 per cent.

DR. ANDERS, of Philadelphia, stated that he is a thorough advocate of the Brand method. He thinks that the chilly sensation produced by the cold bath is not beneficial. Such patients should at once be removed from the tub. Very weak patients should be held in one position while in the bath, to avoid exhaustion. Internal antipyretics are to be avoided in these cases, on account of the cardiac weakness as a result of degeneration of the heart-muscle. The chief value of the cold bath resides in its stimulating effect upon the nerve-centers.

FOURTH DAY—JUNE 9TH.

DR. H. A. WEST, of Galveston, Texas, presented a communication on "The Association of Diseases and Morbid Processes." He spoke of the difficulty of ascertaining after death the exact morbid condition that was the immediate cause of death. A lowering of individual vitality as a result of famine, overwork, and intemperance is one of the main predisposing causes of various morbid conditions. A widespread disobedience of sanitary laws is the common origin of most of our epidemic diseases. In all acute infectious diseases there is a great tendency to involvement of the respiratory organs, and especially to croupous and catarrhal pneumonia. Cardiac disease is usually indicated by symptoms referable to other organs, as dyspnea, digestive disturbance, intestinal or renal derangement, etc. Derangement of the function of one organ will give rise to modification of associated functions elsewhere. If the liver be primarily involved there occurs stasis of the entire portal system, with gastric and intestinal catarrh, constipation or diarrhea, jaundice, etc. Inherited diatheses, as for example, syphilis, predispose to the development of tuberculosis. Scrofulous and gouty individuals are subject to tuberculosis and lithemia respectively. An inherited neuropathic constitution predisposes to various mental and nervous disorders. Especial attention was directed to the relationship between arterio-sclerosis and cardiac and renal disease, and cerebral hemorrhage. The general increase in arterial tension puts an extra strain upon the sclerotic arteries, and rupture, with hemorrhage, readily occurs, with a resultant hemiplegia or even with a fatal result.

DR. DENISON, of Colorado, called attention to the association of fibrosis with tuberculosis. He expressed the belief that the so-called tubercles are the vaults in which nature imprisons the tubercle-bacilli to prevent their multiplication. Under the influence of tuberculin the process that results is not one of softening, but rather one of contraction, as indicated by a shrinkage

in the size of the cervical glands revealed by actual measurement.

DR. SCOTT, of Cleveland, contended that disease is not inherited. A certain state or condition that favors the contraction or development of certain diseases may, however, be transmitted from parent to child. As long as the general system is in a good condition the individual possesses a certain degree of immunity.

DR. WEBSTER, of Chicago, pointed out that disease may be transmitted by heredity, as, for instance, syphilis.

DR. J. H. KELLOGG, of Battle Creek, Mich., presented a communication on "The New Chemistry of the Stomach as a Means of Diagnosis and a Guide to Therapeutics, Based upon the Results of One Thousand Analyses of Stomach-fluids." He described a new method of analyzing the stomach-fluids, and proposed a new classification of gastric disease of functional character. The therapeutic indications of these conditions were outlined, together with the means by which these indications are to be met.

DR. CHARLES DENISON, of Denver, presented a new syringe for the injection of tuberculin, which he claimed was thoroughly aseptic and much better than the one usually employed. On one side the syringe is marked in minims, and on the other side in milligrams. Dr. Denison is in the habit of using a 1 per cent. solution for doses under 20 milligrams and a 10 per cent. solution for doses over 20 milligrams.

SECTION ON OBSTETRICS AND DISEASES OF WOMEN.

SECOND DAY—JUNE 7TH.

DR. T. RIDGWAY BARKER, of Philadelphia, read a paper entitled "The Routine Practice of Administering Ergot After the Third Stage of Labor." The advantages of the practice were summarized as follows:

It insures the woman against possible uterine relaxation, and causes a reduction in the size of the uterus, which consequently encroaches less upon the pelvic viscera. The vessels in the uterine muscular walls are depleted, and the force of the blood-current is reduced. It secures permanent closure of the uterine sinuses, and allows the formation of firm clots at the mouths of the lacerated vessels. It reduces the area of the denuded placental site, thereby lessening the danger of the entrance of septic matter into the circulation. It materially or markedly diminishes the size of the uterine cavity, with the resultant expulsion of all débris. It shortens the duration of after-pains, and renders the occurrence of fermentative changes within the cavity impossible. It hastens and facilitates the physiologic processes incident to involution. The drug is best administered in the form of tablet triturate, as it thus rarely gives rise to nausea or vomiting. It never does any harm in suitable doses, and is always productive of good.

On the other hand, when ergot is prescribed *during* any of the three stages of labor, it is a dangerous remedy, and likely to do far greater injury than any fancied good.

DR. GEORGE I. MCKELWAY, of Philadelphia, read a paper entitled "Repeated Extra-uterine Pregnancy, With the Report of a Case." The position was taken that in all cases in which, upon operation, a tubal pregnancy is found, the ovaries and tubes of both sides should invariably be removed.

DR. HENRY J. CARSTENS, of Detroit, read a paper entitled "Porro versus Cesarean Section." He reported the case of a woman, aged 23, to see whom he was called in consultation after she had been under the care of a midwife for twenty-four hours. Delivery was impossible, even with forceps, and, as the child was dead, craniotomy was performed. Even after this operation, it was quite difficult to deliver, on account of the narrowness of the pelvis. The antero-posterior diameter was found to measure less than three inches. The woman made a slow, but good recovery, and was told that if she ever became pregnant again it would be necessary to induce premature labor. She was, however, desirous of having a child, and did not think that a seven-months' child would live, although informed of the danger and need of Cesarean section if she went to full term. She again became pregnant, and notified her physician two weeks before the estimated end of pregnancy. It was decided to operate at once. The patient was prepared as for any abdominal section. The bag of waters was first ruptured, and then the usual incision was made. The uterus was rolled out *a la* Müller, an elastic ligature applied; then the uterus was quickly opened, and the child, weighing eight pounds, removed. Dr. Carstens was undecided to perform a Porro operation, but all of the physicians present were unanimously in favor of it; hence, he applied a clamp and removed the uterus, tubes and ovaries. The after-treatment was like that of any other celiotomy, and recovery was smooth. The woman nursed her child from the first, and left the hospital twenty-five days after the operation. At present she is the picture of health.

DR. GILES S. MITCHELL, of Cincinnati, reported a successful case of Cesarean section. The patient was a primipara, twenty-four years of age, rather delicate, and of a highly nervous temperament. The abdominal incision was eight inches in length, two-thirds of it being above the umbilicus. There was very little bleeding from the abdominal parietes. As soon as the uterus was exposed a loop of rubber tubing was slipped over the fundus and brought down to the neck. The uterus was then quickly opened, the incision being about six inches in length, through the fundal and middle zones. Delivery was speedily accomplished by means of the feet. The child, a male weighing seven and a half pounds, was asphyxiated, but it was soon resuscitated. The stitches were removed on the seventh day after operation, union having taken place by first intention along the entire wound. On the tenth day the patient was well from a surgical standpoint.

DR. J. N. MARTIN, of Ann Arbor, Michigan, read a paper entitled "Methods of Removing the Uterus for Uterine Fibroids, With Reports of Cases."

DR. JOSEPH PRICE, of Philadelphia, contributed a paper on "Methods and Materials in Abdominal and Pelvic Surgery." He said that in gynecology much of the early work was experimental in character. Methods were tried and abandoned, and then again revived as new and original. The current method of performing vaginal hysterectomy for diseased appendages is imperfect and dangerous in the hands of any one, no matter what his surgical experience and skill. The omental and intes-

tinal adhesions commonly found must be dealt with from above. The mere removal of the uterus is a simple matter, but the complications require painstaking surgery to save the patients and to relieve them from primary and secondary conditions, which were always serious. In cases of peritonitis, whether due to infection through veins, lymph-channels, perforating ulcers, suppurating appendicitis, or dermoids, the treatment should be prompt, radical, and thorough. The cause should be sought for. The abdomen once opened, there should be no hesitation in removing the source of trouble, whether it be appendix, dermoids, suppurating tubes, or a section of intestine. All operators should have an accurate knowledge of their materials. Only imperfect work can follow the use of large coarse silk. Accidents, hemorrhages, abscesses, fistulæ, and a variety of post-operative sequelæ follow its use, as they do also the use of bad qualities of catgut. Fine silk, well placed, is rarely followed by any trouble.

THIRD DAY—JUNE 8TH.

DR. HENRY O. MARCY, of Boston, read a paper entitled "Ventral Hernia Following Laparotomy; Its Causes and Means of Prevention." He said that as about 10 per cent. of all celiotomies result in ventral hernia, in order to lessen or prevent this complication it has become the rule to apply a lacing abdominal support, to be worn for months. Dr. Marcy has during the last eight years employed exclusively the buried tendon suture in the closure of all abdominal wounds, except for a few months, during which time catgut was substituted for tendon. The peritoneum is closed separately. This may be effected by suturing in a variety of ways. Dr. Marcy usually employs the double continuous tendon suture, which is easily and rapidly taken, by the use of a needle with the eye near the point, and which, by rethreading with the opposite end, permits the introduction of the suture from either side through the same puncture. The result is an even, continuous, and close apposition of the serous surfaces of the peritoneum, retained at rest without undue constriction. A fine tendon should be selected for this purpose. Dr. Marcy considers the accurate coaptation of the thick investing fascia of the first importance. This is preferably effected by a line of sutures taken in a similar manner to the one closing the peritoneum. In quite three hundred celiotomies, in which a complete closure of the wound had been effected, but two cases were recalled of ventral hernia following the operation. One of the most common causes of hernia is the routine use of drainage-tubes.

DR. HENRY T. BYFORD, of Chicago, read a paper entitled "The Essentials of Success in Vaginal Hysterectomy." It was maintained that vaginal hysterectomy is an operation attended with little danger, and that the present mortality is caused mostly by: (1) Operating upon unsuitable cases; (2) imperfection in the technique; and (3) mistakes in the after-treatment.

The danger is to be overcome by operating only upon cases in which healthy tissue can be operated on; by using the methods and maneuvers adapted to each individual case, and not adhering rigidly to any one for all cases. The ligature enables the surgeon to perform a more complete operation than forceps; but forceps should be used when ligatures cannot be applied with accuracy. When possible, omentum should be placed between the intestines and the stumps. The ligatured stumps should be drawn together and the peritoneal edges attached either to the vaginal edges or to each other. Iodoform should be packed between the blades of the forceps, but should not be allowed to project upward between the intestines. It should be left for four days as a rule. Douching should be begun about eight hours after the packing is removed, and a return tube used at the first time. The patient should be kept on her back for forty-eight hours.

Dr. Byford reported 35 cases, with 1 death, or a mortality of 2.85 per cent.

DR. LEWIS SCHOOLER, of Des Moines, Ia., read a paper on "The Propriety of Operative Measures in Pelvic Peritonitis." He said that as soon as it is apparent that other means will be of no avail, the time for operative interference is not to be delayed. In chronic cases or cases with frequent recurrences, or cases chronic as regards time and acute with regard to symptoms, there are two periods when operation is justifiable: the first, when life is endangered during a recurrence; the second, after the subsidence of an acute exacerbation. The second is the preferable period; but, unfortunately, it cannot be always secured—first, because the acute stage might demand relief; secondly, the patient frequently refuses the tender of relief of this character when the suffering is not intense. Under this head might be included all those cases of encysted collections of pus, gonorrheal or otherwise; tubal collections of whatever character; diseased and degenerated ovaries; adhesions that give the semblance of tumors by the distortion of the pelvic organs, and the consequent impairment of their functions, as well as all mental and nervous disorders directly traceable to disease of the pelvic organs.

DR. M. B. WARD, of Topeka, Kan., read a paper entitled "Surgical Treatment of Uterine Flexions." He said that it is difficult, and often impossible, to afford permanent relief in a large majority of cases of chronic retroflexion by the methods usually recommended. In many cases it is comparatively easy to give temporary relief by placing the patient in the knee-chest position and gently raising the fundus and tamponing the posterior vault with cotton-wool saturated with boroglycerin. When it is impossible to replace the uterus in the normal position on account of adhesions, this treatment softens the adhesions, relieves engorgement, and gives comfort. The larger number of patients, however, will give histories of long suffering, many attacks of pelvic peritonitis—some mild, some severe—which will readily indicate that serious complications must be overcome before the uterus can be brought forward to the normal position. In this class of cases Dr. Ward informs the patient that the local treatment will give comfort, and if she can exercise due patience she may be permanently relieved; there is, however, a possibility of failure. The next plan recommended is the performance of abdominal section, breaking up the adhesions, removing the appendages, if they are diseased, and bringing the uterus forward. All of this may be safely accomplished in a few minutes, and recovery is likely to be speedy and permanent.

DR. FRANKLIN H. MARTIN, of Chicago, read a paper entitled "A New Operation for Uterine Fibroids, with Report of Cases." The operation consists in the ligation through the vagina of more or less of the broad ligament, with its vessels and nerves, the extent of the ligation depending upon the result sought, from a simple ligation of the base of the ligament, including the uterine artery and branches of both sides, without opening the peritoneum, to a complete ligation of the ligament of one side, including both uterine and ovarian arteries, with partial ligation of the opposite ligament, without opening the peritoneal cavity, if possible, but doing so if necessary.

DR. HENRY P. NEWMAN, of Chicago, read a paper on "Prolapse of the Female Pelvic Organs." He formulated the following conclusions:

1. Pelvic hernias should be recognized and classified as such, and not as diseases of the uterus and adnexa; and their treatment should be based upon hernial pathology.

2. Prophylaxis, in the formative stage of puberty, as well as in pregnancy and labor, is of the utmost moment in this class of cases.

3. Operations upon the pelvic floor or vaginal walls, while indispensable in their place, cannot be relied upon alone to cure all hernias of the pelvic viscera.

4. The ideal treatment is to be found in the combination of operations for repair, and those for accessory support from above, and these may all be accomplished at the same sitting, saving the delay and annoyance of repeated operations.

DR. WILLIAM HUMISTON, of Cleveland, Ohio, read a paper on "Cocaine: Its Uses in Gynecology." He has had five years' experience in the use of cocaine in gynecologic operations, and he performs the following operations with no additional anesthetic: Dilating, curetting, trachelorrhaphy, anterior and posterior colporrhaphy, and perineorrhaphy, frequently performing two of these operations at one sitting. It is essential that a reliable preparation of cocaine be used. Two solutions are prepared—a 4 and a 10 per cent. solution; the former for hypodermatic use, the latter for intra-uterine injection preceding curetting. But small quantities are prepared at a time—a dram with sterilized water, to which is added one drop of pure carbolic acid, to prevent change or the deposition of flaky particles. The quantity of cocaine used for each sitting is from three fourths to two grains; when but one operation is performed, from one-half to one grain is required. In colporrhaphy a 4 per cent. solution is injected in a circle around the portion of mucous membrane to be removed. The whole portion is thus anesthetized, and denudation can be performed with but little bleeding and no pain.

DR. JOSEPH HOFFMAN, of Philadelphia, read a paper on "Ectopic Pregnancy: Its Comparative Symptomatology and Treatment." He said that so far as diagnosis is concerned, the term may be almost used synonymously with symptomatology, for upon the latter the former must depend.

In the treatment, Dr. Hoffman, quoted the words of Stephen Rogers, who said: "*The peritoneal cavity must be opened; the bleeding vessels must be ligated.* He indeed must be a madman who under such circumstances would neglect everything in his power to secure the chances such an operation would afford of saving the life of his patient."

DR. A. H. CORDIER, of Kansas City, read a paper entitled "Extra-uterine Pregnancy. He said that in an experience of sixteen cases, seen during two years in his own practice and in that of others, the duration of pregnancy had extended over as wide a range as the location of the fetus had in variety; from six weeks to two years; from a soft gelatinous embryo to a well-formed nine-pound child; from a cob-nut sized embryo in the tube to a full-grown child in the broad ligament. He held that it was only in the tube that ectopic gestation takes place, all other varieties being only secondary, by rupture of the tube as the fetus develops. All cases of tubal pregnancy rupture at some period, unless the growth of the fetus be stopped by some means; but the methods advocated to check the development of the embryo are so uncertain in result, so unsurgical, and so dangerous to the mother, and the diagnosis is so doubtful prior to rupture, that they are to be practically excluded from the management of the case. Intra-peritoneal is to extra-peritoneal rupture in the proportion of three to one. When rupture takes place between the layers of the broad ligament, the hemorrhage is limited by the resistance offered by the surrounding structures, death rarely occurring to the patient from the first rupture. Dr. Cordier then reported an interesting case of intra-ligamentous ectopic gestation operated on, in which the child was full grown, and had been retained nearly two years.

DR. LLEWELLYN ELIOT, of Washington, D. C., read a paper entitled "The Accouchement Forcé in Certain Obstetrical Complications." He defined accouchement forcé as a labor actively begun and terminated by artificial aid, either through dilators, tampons, Barnes's bags, or the fingers. He urged the superiority of the fingers over all of the mechanical devices in use. This mode of practice is indicated in cases of uremic convulsions, either threatening or in existence, rigidity of the os, placenta previa, uterine inertia, and other conditions requiring artificial aid. Dr. Eliot detailed the history of four cases in which he had employed the method—two of uremic poisoning, with threatening convulsions; one of placenta previa, and one of rigidity of the os—all of which terminated favorably.

DR. GEORGE H. ROHÉ, of Catonsville, Md., read a paper entitled "Lactational Insanity." He said that recent careful study has shown that insanity during the lying-in-period is frequently dependent upon septic puerperal processes. In studying the causes of insanity during the period of lactation, however, not sufficient discrimination has been exercised. Even in cases in which the psychic symptoms of the attack are carefully recorded, too little attention has been paid to the bodily condition. In insanity, the psychic phenomena are generally so striking as to overshadow bodily anomalies, and thus these fail of notice. Among the most recent authorities, however, Dr. Bevan Lewis regards the exhaustion and the sequelæ of labor and defective uterine involution as important etiologic factors, especially in the earlier cases of lactational insanity. Levinstein-Schlegel also lays stress upon local diseases and displacements of the pelvic organs as causes. Dr. Rohé reported five cases of insanity beginning during the nursing period,

which had been admitted to the Maryland Hospital for the Insane in the last two years. They formed 7.4 per cent. of the total number of women admitted during this period. The cases were classed clinically as melancholia, 2; mania, 1, and confusional insanity, 2.

The treatment of lactational insanity resolves itself simply into the exercise of therapeutics. Sources of irritation should be removed; aberrant functions corrected; wasted strength restored.

DR. E. C. DUDLEY, of Chicago, read a paper on "The Abuse of Emmet's Operation for Laceration of the Cervix," in which he said that failure or harm may result: (1) Because the operator has disregarded the existence of granular endometritis; (2) because the os externum has been closed so tightly as to obstruct the free outflow of uterine secretions and menstrual fluid; (3) because the cicatricial plugs in the angles of the laceration have not been removed; (4) because diseased cervical glands have been rolled into the cervical canal, where they find expression either in the form of cervical catarrh or of retention-cysts.

FOURTH DAY—JUNE 9TH.

DR. CAREY K. FLEMING, of Denver, Col., read a paper on "The Management of Patients after Celiotomy." He said that the first symptoms requiring attention after the patient has been placed in a warm bed and has recovered from the anesthetic are nausea and vomiting. Thirst, a condition that annoys the patient as much as nausea, may be controlled somewhat by leaving the abdomen well filled with warm or hot sterilized water. This is rapidly absorbed by the peritoneum, quenching the thirst to a considerable degree. Warm water per rectum often acts in the same way. In cases in which pain cannot be otherwise controlled, from 15 or 20 drops of the deodorized tincture of opium may be given per rectum as often as is required. The use of laxatives may be commenced as early as the second day and certainly not later than the third day after the operation, and continued until peristalsis is reëstablished. For this purpose calomel, in powders of one-tenth grain each, may be administered every hour until the desired effect is obtained.

The following officers were elected for the ensuing year:

Chairman: Dr. Joseph Eastman, Indianapolis, Ind.
Secretary: Dr. George I. McKelway, Philadelphia, Penna.

(To be continued.)

AMERICAN ACADEMY OF MEDICINE.

Eighteenth Annual Meeting, held at Milwaukee, Wis., June 3 and 5, 1893.

FIRST DAY—JUNE 3D.

THE report of the Committee on Eligible Fellows included a catalogue of nearly all the college-bred physicians in the United States, embracing over 5000 names and addresses of such members of the medical profession as are eligible to Fellowship, compiled largely from the catalogue of the various literary colleges.

From these lists some 1600 were selected, residing chiefly in the Northwest, or graduates of Harvard, to whom copies of the handbook of the Academy were sent for the purpose of interesting them in the Academy. To make this list complete from year to year, it will be necessary to secure the coöperation of the Faculties of Medicine in furnishing the committee with a list of their graduates who are college-bred.

The report of the Committee on the Comparative Value of Academic Degrees, quoted from the last report of President Eliot, of Harvard, to the effect that the University is gradually approaching a condition in which its various degrees will be satisfactorily coördinated; so that candidates for a superior degree will be required to have already attained some appropriate inferior degree. Mention was made of the new department of medicine in the Johns Hopkins University, where this coördination has been practically accomplished. The proportion of medical students at Harvard having literary or scientific degrees is on the decrease, while in the medical department of Columbia College the reverse condition exists. The reasons assigned for this are that the average age of the Harvard A.B. is greater than that of the Columbia A.B., and that Columbia permits her men to overlap the two courses. The reasons were not found to be satisfactory, because so many of the men possessing degrees in each medical school come from other colleges; in many instances alumni from the same college are found in the two medical schools.

The custom of having different Bachelor's degrees to represent the various college courses was discussed. It was argued that if the courses were arranged as parallel in a college, they should, first, be of equal value and, secondly, afford a liberal education. If they do this, the same degree could be given to the students of each course.

The Committee recommended that the Academy urge upon the medical schools that they endeavor, as rapidly as possible, to properly coördinate the university degrees by restoring the degree of M.D. to the proper position of an advanced university degree, given only to those who have already taken a first degree. It also recommended that the colleges be urged to so arrange their various courses leading to a first degree that they may be fairly equivalent, and be rewarded by the same degree.

DE. R. LOWRY SIBBET, of Carlisle, Pa., read a thoughtful paper entitled "A Brief Review of the Attitude of Medical Schools in Relation to Matriculate and Graduate Studies." He quoted from the last report of the Illinois State Board of Health, that there had been 294 medical colleges organized in the United States prior to 1891; that 159 became extinct and 18 are on record as fraudulent. The institutions now existing may be arranged into three groups. The first group comprises the colleges requiring a four-years' course, at the head of which stands Harvard University, which has provided an admirable four-years' graded course; but the requirements for matriculation are manifestly unequal.

Thus if one enters her school of liberal arts, graduates there and then enters upon the medical course, at least ten years will have elapsed between the time of the beginning of the preparation to enter Harvard and the reception of the doctorate. But, at the same time,

the examination for entrance is such that a course of study extending over six years will secure the degree. Hence the value of the Harvard M.D. may be expressed in the unit of years of study by any number from six to ten.

Another and larger class of institutions requires a three-years' graded course, but with an equally unsatisfactory minimum entrance-examination, so that the value of the degree of M.D. from these institutions, expressed in years of study, may vary from five to nine. The third class includes those medical schools that still adhere to the two-years' ungraded course, and here the value of the degree in the same terms is from four to eight. Hence it is that our M.D. degree, as an expression of the amount of time given to obtain it, has a very variable value.

The following inferences were drawn: 1. The inequality of the M.D. degree prevents its proper recognition in Europe. 2. The American Medical School has made a prolonged effort to educate an important class of citizens by the natural sciences alone, without adequate preliminary training, and has failed. 3. Supplemental post-graduate instruction must equally fail; the higher the superstructure the greater the necessity for a foundation. 4. Time is a most important condition in the matter of education.

DR. BAYARD HOLMES, of Chicago, said that the unit of measurement should at least be in months instead of years, some schools being six months' schools, some seven, and some nine. But a better standard would be that estimated in "educational units." This "educational unit" is ordinarily considered to be sixty recitation hours, or twice as many clinical hours, *i. e.*, 120, or 120 laboratory hours. Twelve educational units thus constitute one year's work of nine months.

DR. CONNOR, of Detroit, praised the suggestion of Dr. Holmes: "It is not, however, the number of hours we sit at table, that is the important factor, but the quantity of food taken and its nutritive value." He thought that, with proper regulations, the student should keep at his studies eleven or twelve months, and in this way four years of usual work could be condensed into a smaller number of years. Much of the teaching in our medical schools is for the teachers' benefit, the most thorough instruction being positively avoided in order to get subsequent consultation-practice from poorly-equipped practitioners. Good schools do exist, depite the method, but the tendency of the method is bad. Dr. Connor also complained of the unsanitary, often filthy, condition of many medical school-buildings, a fact hindering the best results in health and work.

DR. WING added praise of the German method, whereby little value is placed upon the diploma, but a high value upon the rigorous examination. The right of the diploma to permit the holder to practise should be abolished.

DR. JONES contended that each State should establish its own standard, and that State examinations would do away with irregular schools. However great the injury from possible political methods, the injury is less than that from the diploma-authority.

In the absence of DR. JAMES W. MOORE, of Easton, Pa., an abstract of his paper, entitled "Some Thoughts in Reference to the Necessary Preliminary Training for the Medical Profession," was read. Reference was made to the marvellous advances in all departments of knowledge coexisting with many crude beliefs that belong rather to the Middle Ages than to the nineteenth century. The medical profession is not exempt, but contains many who accept spiritualism, telepathy, *similia similibus curantur*, increased-potency-by-diminished-bulk, etc. The recent "experiments" of Dr. Luys in the Hospital of La Charité are explicable by disease, coincidence, and fraud, particularly the latter. The evidently erroneous reports to Boards of Health and the unscientific circulars in reference to contagious diseases issued by these boards were noted. The medical profession is excused, though not justified, in its desire to try anything that it thinks may result in good to humanity, on account of the weight of tradition, ignorance of preventive medicine, and lack of knowledge of science and scientific methods.

The preliminary studies should be selected for each faculty, and the exercise should be persistent. Studies introduced for training's sake alone are valuable and desirable. Youth should not be allowed to select the exercises. Mental powers should be trained when deficient. The natural sciences are best fitted to develop sense-perception; pure mathematics, the reasoning powers; grammar and language, the memory; and psychology, all. The dead languages—Latin and Greek—have advantages that the modern languages do not possess, besides being the source of medical terms.

Reasoning, both synthetic and analytic, as employed in the natural sciences, is the life-work of the physician; and in order to be successful his discipline in early life must be severe. The means employed for the training may be forgotten, but they have not been useless if the result of cultivation has been attained.

DR. HOLMES laid stress upon the extreme importance of preliminary education. The great fraud lies in the so-called preliminary examinations, to which, to Dr. Holmes' personal knowledge, college-faculties request the candidate not to come. Chemistry and biology should precede the medical course.

The President, DR. JUSTIN E. EMERSON, of Detroit, read the Annual Address. His subject was "Standards of Measurement." He clearly traced the historic progress toward accuracy in the standards of measurement of length, weight, volume, force, etc., and described the various units in use among scientific men. From these standards the speaker proceeded to the consideration of educational standards, at present indefinite, but looking toward an ideal and practical accuracy similar to that of the standards accepted in physics. A plea was made for the man and for humanity in medicine, and for generalized academic training as a basis for the professional life. Success and money are not true standards. Possession of wealth does not mean that the possessor is worth his acquirement. "I revere the man who *is* riches."

DR. ELBERT WING, of Chicago, opened the discussion upon the subject: "Should there be Elective Studies in a Medical Course?" The practical problem in medical education is to take the material offered and to fit it as well as possible for its work. Formerly the preceptor was the important factor, whereas now he is only a figurehead. Then the doctor knew more than his books,

while the reverse is the case at present; but his greater knowledge does not always render the modern man the better medical counselor. The usual education of to-day makes the class of men who are to become simply ordinary general practitioners safe medical men, but will not satisfy those who seek to become scientists and consultants. On the whole, the speaker advocated the institution of elective studies. They would serve more accurately and speedily to put men, especially the poorer men, in their proper places, and work now done postgraduate will be carried out in undergraduate periods. Three groups of practitioners now show the tendency toward elective studies: 1. The ordinary general practitioner; 2. The especially excellent general practitioner; 3. The specialist. All disciplinary studies should precede medical study. Except in chemistry, teachers should be physicians in actual practice. There is a danger of exacting too much laboratory work of the undergraduate. The physician's function is to heal disease, and medical knowledge without practical therapeutic ability, is like erudition without character and morality.

DR. CONNOR emphasized the value of elective studies in bringing to exercise and use the special capacities of the student, thus allowing peculiar aptitudes to be normally developed, and the provision made for all grades of practitioners.

DR. GEORGE M. GOULD, of Philadelphia, read a paper entitled "The Duty of the Community to Medical Science." He advised medical men by every means in their power to spread abroad throughout the community the fact that there is no duty so important, no self-interest so evident as the duty and the self-interest of the endowment of institutions of preventive and didactic medicine. Let the powerful and the rich fall ill, and immediately they send for a physician, but they have never taken into consideration the necessity of their help to enable the physician to successfully combat their disease. Sinking funds are created in financial matters, but financiers should be taught the financial value of health and life, and the necessity of taking some precaution to secure proper service in cases of sickness.

The productive funds of the theologic schools of the country amount to from seventeen to eighteen millions of dollars; those of the medical schools to about one-half of one million. While acknowledging the value of theologic schools, is there not a too marked contrast here? Which class of schools, from a purely financial view, yields the best mundane and cash interest, the investment in M.D.'s or that in D.D.'s? Jenner saves the community more dollars in one year than all the endowments of all the theologic schools of all the world. It is agreed that within the past few years medical science has lengthened the average life some three or four years, which proportionally postpones and lessens the number of funerals. The saving in cab-hire to the community from these postponed funerals would alone nicely endow every medical school in the land. This is a *reductio ad absurdum* of a peculiar sort, but is it not true?

The failure to endow medical schools puts the most precious things in the world—health and life—in the hands of men uneducated either as regards general literature and science, or as regards medicine. It also lessens the proportion of college-bred men studying medicine. When a profession fails to attract the college-bred men, something is radically wrong somewhere. It consists largely in the general lowering of professional character, due to the dumping of thousands of uneducated boys into the profession. The fault of the dumping process must lie with the commercialization of medical schools. The motive for teaching in unendowed schools is too often sordid and selfish, whence it becomes necessary to graduate as many as possible, and to make true teaching subordinate to professional fame and the acquirement of consultation-practice. If half a dozen men own a college, and absorb all its revenues and honors, it is asking too much of unconverted human nature to expect them to tremendously enlarge the paid teaching body, dividing both the emoluments and fame, by reorganizing the school to meet the entirely changed demand of the day. The endowment of hospitals is attractive to people of wealth, but, as at present managed, the abuse of hospitals and dispensaries makes dangerous increase of the popular communistic habit, and works frightful injustice to physicians as a class. So it is possible that eventually hospitals may become a public injury rather than a public benefit.

But, apart from this, what is the use of a hospital other than to attempt to correct evil results without removing the causes producing them. It neglects the greater duty of prevention. To train men in the knowledge of the nature, cause, and cure of disease requires an endowed college. The unendowed college is doomed.

Prevention is the present grand problem in medicine, and there is nothing more hopeful for the future of medicine than the attention physicians are turning to prophylaxis. There is still some danger of the non-medical scientist seizing upon this branch, and leaving to the physician the more restricted department of therapeutics. To prevent this the profession must teach and beg society to endow university medical schools, so that the proper facilities and requirements may be had.

There are two sources whence the money may come: communal or State appropriations, and private gifts. The former, while it is the duty of the State to provide such facilities, is objectionable on the ground that along with wise appropriations there will be others for every sort of quackery, as when an appropriation has been voted for sectarian schools and humbugs generally. Reliance should be placed on private gifts, and for these the rich must be educated. There is more money today devoted to astronomy than to the prevention of disease. The best results may be expected by seeking an endowment for those schools connected with universities.

In addition to the endowment of professorships, there are needed medical scholarships. Medical students alone of all have no help in this direction, and many would gladly prolong their time of study were they not driven out for bread-winning.

Let us, then, go back to our lay friends with a message, a new gospel, showing the advantages of a life free from disease, and the reduction of a needlessly high death-rate, which, from a financial standpoint, will be a good investment for the community. Let us urge the service medical men have given to the community; the results to our navies of the stamping out of scurvy; the value to England of the reduction of the death-rate in the Indian army from ninety in a thousand to thirteen in a

thousand. Show by the actuaries' tables the increase of the expectation of life, and then show the money-value of this to the State. Then it may become manifest what medicine has already done; but before and beyond all, what she still promises to do, if she have but the sympathy and help she deserves.

Dr. Charles McIntire, of Easton, Pa., read a paper entitled "Medical Education in the United States; from Chaos toward Cosmos." The paper was a study of the process of preparation, and treated of the various stages in turn.

1. The preliminary requirements. Ten or fifteen years ago the single preliminary requirement was the payment of the matriculation fee, but now some educational requirement is to be found in the catalogue of almost every medical school. With but few exceptions, however, the standard of preliminary education necessary to enter upon the study of medicine is lower than the standard for entering the freshman class of any college.

2. The technical studies. After describing the character of the courses in most colleges, the essayist said: "Possibly the greatest fault in our medical educational system is the elementary character of the didactic teaching, not permitting the pupil to fully grasp the applications of that teaching in the cases presented in the clinical lectures; and the insufficiency of the reviews, or 'quizzes,' and clinical practice, which is but a review in another form."

3. The final tests. These are chiefly examinations conducted by the lecturers, each for his own subject, and of which he is the sole judge. When the diploma gives the right to practise this may, and often does, work a great deal of harm.

4. The licensure to practise. A gradually increasing number of States are adopting laws compelling the medical graduate to pass a State examination before being permitted to practise; this procedure was commended.

The American system of medical education was characterized as giving abundant opportunity to study, but making few requirements of the student. One who desires can be thoroughly trained, but the indifferent and the incompetent are given the degree without the training. It was thought that there is an improvement all along the line, and that the day is coming when the reproach would be removed from the American system of medical education.

(To be concluded.)

NEWS ITEMS.

The American Association of Genito-Urinary Surgeons will hold its Seventh Annual Meeting at Harrowgate, Tenn., June 20 and 21, 1893. The following scientific program has been arranged:

June 20th: "Report of a Case of Papilloma of the Bladder: with specimens and drawings," by John P. Bryson, M.D., of St. Louis; "Investigations as to the Presence of Lymphatic Nodules in the Normal Bladder and Other Parts of the Urinary Tract, and the Part they Play in Certain Inflammations; with specimens and microscopic preparations," by Samuel Alexander, M.D., of New York; "Two Cases of Spontaneous Fracture of Stone in the Bladder," by Francis S. Watson, M.D., of Boston; "Long-continued and Permanent Bladder Drainage," by Paul Thorndike, M.D., of Boston; "Cases illustrating some of the more Unusual Forms of Urinary Retention," by Francis S. Watson, M.D., of Boston; "On the Treatment of Cancer of the Prostate by Supra-pubic Section, with Parenchymatous Injections of Pyoktanin Blue," by John P. Bryson, M.D., of St. Louis; "Supra-pubic Drainage of the Bladder in the Treatment of Extensive Urethro-rectal Fistula," by Samuel Alexander, M.D., of New York; "Abscess of the Space of Retzius," by Paul Thorndike, M.D., of Boston; "Exhibition of a Genital Dressing Retainer," by Bransford Lewis, M.D., of St. Louis.

June 21st: "A Case of Calculous Pyelitis with Complete Suppression of Urine for Seven Days; Relieved by Operation," by Arthur T. Cabot, M.D., of Boston; "A Case of Double Nephro-lithotomy," by James Bell, M.D., of Montreal; "Union by First Intention of the Wounds following the Excision of Inguinal Bubo," by Francis S. Watson, M.D., of Boston; "A Contribution to the Pathology of the so-called Strumous Buboes," by John A. Fordyce, M.D., of New York; "An Odd Method of Syphilitic Inoculation," by William Judkins, M.D., of Cincinnati; "Affections of the Testicle in Hereditary Syphilis," by R. W. Taylor, M.D., of New York; "Some Points in the Diagnosis of Urethral Inflammations," by Samuel Alexander, M.D., of New York; "The Rôle of the Posterior Urethra in Chronic Urethritis," by Bransford Lewis, M.D., of St. Louis; "An Experimental Study of the Therapeutics of Gonorrhea," by Edward Martin, M.D., of Philadelphia; "The Practical Value of Aëro-Urethroscopy (with exhibition of a new instrument)," by W. K. Otis, M.D., of New York; "Exhibition of Photo-micrographs, illustrating Some Pathological Conditions of the Urinary Organs," by John A. Fordyce, M.D., of New York.

The Medical Society of New Jersey will hold its one hundred and twenty-seventh annual meeting at Asbury Park, on June 27 and 28, 1893. The Annual Address will be delivered by the President, Dr. George T. Welch —"Therapeutical Superstition." The scientific program will include, besides, a paper by W. B. Johnson, M.D.,—"Legislation for the Prevention of Blindness." Discussion upon subject presented at last annual meeting —"Is the Philosophical Practice of Medicine not Materially Jeopardized by the Modern Methods of Venders of Drugs?" The discussion to be opened by H. L. Coit, M.D. Paper—J. Percy Wade, M.D., corresponding delegate from Maryland—"Investigation as to the Use of Sulf. Magnes. Hypodermically Administered." Essay—Third Vice-President, William Elmer, Jr., M.D. —"Quarantine of Cholera." Paper—S. E. Armstrong M.D.—"Some Thoughts on Symptoms and Diagnosis."

Revue de la Tuberculose is the name of a new quarterly, issued from Paris, the first number of which bears the date April 15th. Petit is the editor-in-chief. The collaborators include Verneuil, Brouardel, Charcot, Cornil, Fournier, Grancher, Lannelongue, Potain, Richet, Straus, Tarnier, Kelsch, and Gamaleia. The name of the publication sufficiently indicates the scope of its activity.

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ORIGINAL ARTICLES.

ICE IN THE TREATMENT OF ACUTE PNEUMONIA.

A Collective Report.

BY THOMAS J. MAYS, M.D.,

PROFESSOR OF DISEASES OF THE CHEST IN THE PHILADELPHIA POLYCLINIC, VISITING PHYSICIAN TO THE RUSH HOSPITAL FOR CONSUMPTIVES, ETC.

WHATEVER its nature may be, it is quite certain that no other disease has elicited a greater number of conflicting opinions concerning its treatment than has croupous pneumonia. Forty years ago bleeding and blistering were regarded as its specifics; but these are now, and for the last twenty years have been, scarcely thought of in this connection. In the meantime hot poultices, aconite, veratrum viride, digitalis, quinine, etc., took their places; yet it is not too much to say that these have all led to disappointment and have come to grief in the retort of clinical experience, and that finally the profession has gravitated to the conviction that the disease is self-limited in duration, and that hence all efforts to control its course are fruitless, if not actually harmful.

To be thus compelled to stand before a disease and acknowledge our helplessness and impotency is, to say the least, an unenviable position, but I must confess that until I became familiar with the value of local cold applications in pneumonia I was in entire accord with this idea. Since then I may say that I am able to approach a case of pneumonia with a greater degree of assurance—not with the feeling, however, that we possess a specific, but with the confidence that we have in cold an agency with which we are able to impress and circumvent the severity of the pneumonic process. I believe that cold properly applied will affect the death-rate of pneumonia as profoundly as it has affected that of typhoid fever, and, although I do not expect a rapid introduction of this measure, on account of a deep-rooted prejudice which exists against the use of cold in almost all internal diseases, I trust that the evidence which is herewith submitted will serve to commend it to the serious attention of the profession.

Under the titles "Can Croupous Pneumonia be Aborted?" and "Ice in the Treatment of Croupous Pneumonia," I contributed two papers to THE MEDICAL NEWS of September 24, 1892, and January 21, 1893, respectively, in which are related three cases of pneumonia that were treated principally with applications of ice to the chest. After the appearance of the first paper I instituted a collective investigation on a small scale by sending a number of circulars[1] to various members of the profession, inviting a trial of the ice-treatment, and as a result of this inquiry I submit the following abstracts of cases which have been kindly returned to me, and also of those of other cases which I have collected from the literature on the subject.

CASE I.[2]—M., aged thirty-six years, was attacked with right basic pneumonia March 10, 1892, when the temperature reached 105°, pulse 112, and respiration 26. Ice was applied over the affected area until the 16th inst., when crisis followed the hypodermatic injection of ¼ of a grain of pilocarpine, and the temperature fell to normal. Recovery was retarded by fibrinous pleurisy. The patient was able to sit up on April 11th.

CASE II.— F., aged seventy-four years, had pneumonia of the right base, associated with delirium. Ice was applied over the affected area from the 6th to the 10th of March, 1892, when the crisis occurred and the ice-treatment was discontinued. The temperature and pulse records are lost, but the improvement was prompt and rapid.

CASE III.—M., four years of age, was first seen March 6, 1892, when the child was intensely delirious and quite insensible. Pneumonia of the right base existed. Ice was applied from March 7th to the 13th, when lysis took place. There was no pulse or temperature record kept, but it was "a very severe case, in which the cold acted like a charm."

CASE IV.—M., fourteen years old, had pneumonia of both bases, the consolidation extending above the nipple on the right side. Ice was applied around the whole chest from the 22d to the 29th of March, 1892. At the beginning of the application the temperature was 105°, pulse 100, and respiration 28. Crisis occurred on the 28th, when the temperature became normal.

CASE V.—M. aged two years, had pneumonia, most severely at the left base, and was very delirious. Ice was applied March 12th, when the temperature was 101°, pulse 150, respiration 40. The ice-applications were continued until the 14th, when crisis took place, and temperature became normal. "I think this can be taken as an aborted case."

CASE VI.—F., aged twenty-three, had a chill January 7, 1892, which was followed by pneumonia

[1] Similar circulars will be cheerfully sent by the author to any one who may apply for them.

[2] The first eleven cases are reported by Dr. W. Fred. Jackson, of Brockville, Ontario.

implicating the whole of the right lung. On January 8th, when the temperature was 105.2°, the ice was applied, and by next morning the temperature had fallen to 99°, and the next day it was normal. In order to satisfy the patient the ice was continued until the 11th. He also has an organic heart-lesion, which aggravated his condition very much.

CASE VII.—M., aged thirty-four, had pneumonia of the right base. When first seen, January 12th, he was insensible, the temperature was 103°, and he had rusty and bloody expectoration. The ice was applied on this day, and the next morning the temperature had fallen to 100°, but owing to some objection it was taken off, and by evening the temperature had risen to 103.2°. The ice was promptly reapplied, and the following day the temperature reached 100°; a day later crisis occurred and the temperature fell to normal.

CASE VIII.—F., aged sixty-five, had pneumonia of the whole of the right lung. Ice was applied to this side March 16th, when the temperature was 103°; next morning it had fallen to 101°. Owing to prejudice, the applications were discontinued until the morning of the 22d, when she was no better, and the temperature had again risen to 103°. The ice was then reapplied. On the evening of this day the temperature was 101°; the morning and evening of the 23d it was 100° and 99.6°, and crisis occurred on the 24th, when the temperature became normal.

CASE IX.—M , aged forty, had pneumonia of the upper half of the left side and right base. The sputum was bloody. On the morning of February 5, 1892, the date of his initial chill, the ice was applied; his temperature was 104.4°, and in the evening 102°. On the 6th, the morning record was 100°, the evening 99°. On the 7th, crisis supervened and the temperature became normal. The pain which this person experienced was also quickly relieved by the ice. The disease was "aborted in the congestive stage."

CASE X —F., aged thirty-five, had pleuro-pneumonia of the left base. The initial chill was on February 5th, and ice was applied over the left lung on the morning of the 6th, when the temperature was 101°. On the evening of the same day, it was 100°; on the 7th, morning 99.4°, evening 99°. On the 8th, crisis took place, and the temperature was 98°.

CASE XI.—M., aged thirteen, had pneumonia of both bases. Ice was applied around the chest on March 10, 1892, when the temperature was 105°; on the 11th, the record was 103°, and on the 12th, 102°. On the 13th crisis occurred, with a thermometric record of 98°. "A very severe case in which the effect of the cold was very marked." (All of Dr. Jackson's cases received liq. ammon. acetat. ʒij. and spt. ether. nit. ʒj. every hour, well diluted.)

CASE XII. (Reported by Dr. E. W. Blackburn, Stahlstown, Pa.)—The patient was a male, a periodical drinker, aged forty-one, and had pneumonia over the whole of the right lung. The initial chill was on November 10, 1892, following a three days' alcoholic debauch, and the man was first seen on the following day, when his temperature was 103.2°. The ice was then applied. On the 12th, the temperature was 101°; on the 13th, 99°; on the 14th, lysis occurred, with a normal temperature. This patient also received $\frac{1}{60}$ grain of strychnine every four hours.

CASE XIII.—(The following four cases are reported by Dr. J. C. Knipe, Jewish Hospital, Philadelphia.) The patient, a male, aged thirty-seven, an alcoholic, was taken with a chill, which was followed by pneumonia of the left base, on March 11, 1893, two days before admission to the hospital. He was suffering from diarrhea, lead-poisoning, and while in the hospital had an attack of delirium tremens. His temperature ranged from 102° to 103°; the ice was applied for three days, and death took place on the fifth day in the hospital.

CASE XIV.—A male, aged twenty-eight, with pneumonia of the left lung, was admitted October 17th, although he had a chill two days previously. He was delirious, and had rusty and bloody expectoration. The ice was applied over the affected area for five days. His temperature on admission was 104°, afterward from 100° to 102°. He died October 22d. Before this attack he had been suffering from chronic pneumonia of both bases.

CASE XV.—A male, aged seventeen, had pneumonia of the right base, December 27, 1892. On admission, when the ice was applied, his temperature was 103°, and for the next twelve days, during which the ice was continued, it ranged from 101° to 98°, and disease terminated by lysis at the end of that time.

CASE XVI.—A male, aged twenty-one, was seized with pneumonia of the right base February 2, 1893. The ice was applied for six days over the affected area. The temperature remained at 104° and 105.6° until midnight of the second day of the disease, when it dropped to 99.4°. Shortly after this time the patient had another chill, and on the third day, in the morning, the temperature rose to 105°, and in the evening, after a profuse sweat, it fell to 98°; from this time it fluctuated between 104° and 98°, until the seventh day, when it became normal, and remained so. This patient also received aconite, morphine, and ammonium carbonate.

CASE XVII.—(The next two cases are reported by Dr. John A. Fell, of Doylestown, Pa.)—M., aged sixty, had the initial chill, December 20, 1892, and from this time to the afternoon of the 28th, the temperature varied from 102° to 103.5°. On the last date the ice was applied over the lower half of the right lung, the seat of the pneumonia, and at noon of January 1st the temperature was normal, when it was removed. He also received $\frac{1}{20}$ grain of strychnine every four hours until January 1st. This patient also had an old-standing aortic regurgitation. At first he objected to the use of the ice, but it gave him such marked relief from his distressed breathing that he became much pleased with it. He also received two ounces of fresh beef-juice and a glass of milk alternately every two hours.

CASE XVIII.—F., aged seventeen, had pneumonia of the left lung. For the first three days the tinctures of aconite, belladonna, and veratrum viride were used in large doses, and mustard was applied to the affected side, without any apparent effect. Her

temperature was about 103°, and pulse 120. On the fourth day the ice-bags were applied, and in less than twenty-four hours the temperature had fallen to 99°, and the patient experienced a sense of comfort which she had not felt before. Strychnine, quinine, and morphine, were also used. "Her recovery was rapid and complete after using the ice."

CASE XIX. (Reported by Dr. A. Cooper, Brookline, Mass.)—A male, aged thirty-one, had the initial chill on the evening of January 31, 1893, and the expectoration was of a bloody and mucous character from this date. Both bases were involved. On the evening of February 1st the temperature was 102.5°; the next morning it was 104.25°, when the ice was applied. On the evening of this day it was 103°. On the third day it fell to 101°, and was almost normal on the fifth day. The ice was applied for seventy-two hours to the right, and for eighty-six hours to the left side, and the disease subsided by lysis. Dr. Cooper adds: "In six hours after the ice had been applied the temperature dropped from 104.25° to 101°. The ice had been on a very short time when pain and dyspnea ceased. My patient was better on the fifth day than was any case I have had under poultice or hot local treatment on the ninth or twelfth day."

CASE XX. (Reported by Dr. G. H. Franklin, Hightstown, N. J.)—F., five years of age, had an initial chill February 17, 1893, followed by pneumonia of the entire right lung. From this date to the 20th the temperature rose from 102.5° to 104°, and she received the usual treatment for this disease. On the latter day ice was applied to the front and side of right lung, and was continued for seven days, during which time the temperature gradually returned to nearly a normal point (99°). Previously to the ice-treatment large doses of quinine had exerted no influence on the fever. The patient also received $\frac{1}{120}$ grain of strychnine every four hours. This was a case of broncho-pneumonia following measles.

CASE XXI. (Reported by Dr. Eugene P. Bernardy, Philadelphia.)—M., aged twenty-five, was first seen September 15th, although the chill had occurred three days previously. The lower two-thirds of the right lung were involved. Expectoration was copious, rusty, and bloody. The patient was violently delirious; his temperature ranged from 102° to 104°. Ice was applied on the 16th, and was continued to the 19th On the evening of the last date active delirium set in, and the ice was discontinued. After the delirium was under control ice was again applied for three days longer, when the disease terminated by crisis. The patient also received $\frac{1}{100}$ gr. of strychnine every two hours.

CASE XXII. (Reported by Dr. Charles E. Woodward, West Chester, Pa.)—F., aged thirteen, with double pneumonia, had the initial chill March 20, 1893, accompanied by a temperature of 104°. The expectoration was bloody at first, afterward rusty. Crisis took place on the seventh day. Turpentine stupes were applied externally, and strychnine in $\frac{1}{100}$ grain doses was given internally every four hours from the beginning. General sponging with cold water (65°) was used throughout, and ice was applied only three times, and fifteen minutes each time. The superiority of the ice-bag over the cold sponging, was shown by the temperature-record. While the cold sponging reduced the temperature, which was about 104° for seven days, the reduction caused by it was not so pronounced as that which was caused even by the fleeting local application of ice. It is stated that the patient experienced great comfort from the use of the ice-bag.

CASE XXIII. (Reported by Dr. E. R. Snyder, Philadelphia.)—F., aged three years, had double pneumonia, the lower third of the left lung being involved at the beginning, and on the fifth day the lower part of the right lung became implicated. On the sixth day the temperature had risen to 105.4, and the child became unconscious. The whole chest was now enveloped in ice, and in six hours, when the temperature had fallen to 102.5°, the ice was removed. In the next six hours the temperature rose to 104°, when the ice was reapplied, and in one hour the thermometer registered 102.5°. After this the temperature gradually dropped to the normal point. There was good reason for believing that the ice saved the child's life. Strychnine was given hypodermatically in $\frac{1}{30}$ grain doses, and croton oil was applied externally.

CASE XXIV. (Reported by Dr. Walter Webb, Sharon Hill, Pa.)—A male, aged sixteen, had pneumonia of the entire left lung and lower portion of the right. The patient was seen first November 2, 1892, when the temperature was 105°, respiration about 60, and pulse 120. The parents objected to the ice when Dr. Webb first suggested it, but as no improvement in the boy's condition was observed, the parents permitted its use on November 6th, when the evening temperature was 105.2°, and the respiration 64. After this the fever gradually fell until the 14th, when it registered 102° in the evening. The ice was now withdrawn and the temperature rose a degree or more, and the boy complained of severe pain and greater difficulty in breathing. The ice was reapplied on the 17th, the temperature fell, and the patient expressed himself as being greatly relieved when the ice was reapplied. It was continued for two weeks, when the fever had disappeared.

The following six cases are my own:

CASE XXV.—F., twenty-five years of age, with double basic pneumonia, and with pleurisy on the left side, was first seen in the Polyclinic Hospital, November 24, 1891. She had a temperature of 103.4°, and ice-bags were applied over the affected area. The temperature began to decline immediately, and, excepting a slight rise on December 3d, sank to nearly a normal level on the eleventh day.

CASE XXVI.—F., thirty seven years old, was seen first in the Polyclinic Hospital, June 25, 1892, when she was suffering from pneumonia of the lower half of the right lung, and had a temperature of 103°. Ice was applied at once over the affected area, and by the following morning the temperature had descended to 98.8°, although in the afternoon it rose again to 101.5°. On the

morning of the third day the thermometer registered 98.2°, and in the evening 100.8°. After this, with a few variations, the temperature became normal, and remained so.

CASE XXVII.—M., fifteen years of age, had been having pneumonia of the lower two-thirds of his right lung for about six days before I saw him. On the evening of the second day his temperature was 104.8°, and cold-sponging was resorted to until the sixth day, when the temperature was reduced to 102.8° at 2.30 P.M. Ice-bags were now put over his right chest, and at 1 P.M. of the next day the temperature registered 98.2°, and at 8 P.M. 100°. On the following morning it was reduced to 97°, when the ice-bags were removed until reaction was assured. From this time on, the temperature, with a few exceptions, remained near the normal line, and the boy made a complete recovery.

CASE XXVIII.—A female, eighteen years of age, was first seen by me June 17, 1892, suffering with pneumonia of the whole of the right lung, and having a temperature of 102.8°. The whole right chest was surrounded with ice-bags on the third day of her disease, and by the next morning the temperature had fallen three degrees (to 99.6°), and thereafter became gradually normal. Complete restoration followed at once.

CASE XXIX.—A male, aged forty-five, an inveterate drinker for twenty years, was admitted into the Polyclinic Hospital, December 15, 1892, on the fifth day of a pneumonia involving the whole of the left lung, and with a temperature of 102.6°. The whole left chest was enveloped in ice, and on the morning of the eighth day the temperature was normal. With the exception of a severe attack of delirium, which occurred on the ninth day, the man made an uninterrupted recovery.

CASE XXX.—M., aged thirty-four, had pneumonia of the whole left lung when first seen in the Polyclinic Hospital, March 26, 1893. His evening temperature was 103.8; ice was applied, and the the next morning the pyrexia had fallen to 100.4°. It remained near 101° until the 28th, when it rose to 102.4°. It was now found that the whole lower half of the opposite lung was involved. The man had several attacks of hemoptysis, his face was intensely flushed, and his breathing extremely difficult. Inhalation of oxygen relieved the distress somewhat. The patient was delirious, and had a tendency to coma. The ice was continued on both sides, and the temperature, except on several occasions, was kept between 101° and 102°. Resolution soon followed in both lungs. Owing to the gravity of the condition convalescence was slow, but the man made a good recovery. The ice was continued for twenty days. In addition to the oxygen-inhalations, the patient received strychnine in large doses, by the mouth and hypodermatically, and was liberally fed and stimulated.

The next eighteen cases are reported by Dr. D. B. Lees in an article published in *The Lancet*, November 2, 1889:

CASE XXXI.—M., twenty-five years of age, had pleuro-pneumonia of the right base. On November 15, 1887, the fifth day of the disease, the temperature was 104.8°. The affected side was tightly strapped and an ice-bag applied over the strapping. The temperature fell immediately, and was normal the next morning, when the ice-bag was removed.

CASE XXXII.—M., aged twenty-six, with pneumonia of the left posterior base, was seen on the seventh day, when the temperature was about 104° and ice was applied. During the following night the temperature fell to 99°.

CASE XXXIII.—M., sixteen years old, with pneumonia of the right base, was seen on the fourth day, when his temperature was 104°. Snow was at once applied, and the temperarure fell immediately.

CASE XXXIV.—A child, three years old, had broncho-pneumonia of the base of the lung. The temperature was 104°, and the breathing was very rapid. The ice-bag was applied over the affected lung. Within twenty minutes of its application a distinct change for the better was observed. The breathing became much quicker, the temperature fell at once, and in a few days the patient was quite well.

CASE XXXV.—M., four years of age, had pneumonia of the left posterior base. The temperature was 104.5°, the pulse 140, the respiration 50. Ice-bags were applied over the implicated lung-area, and immediate recovery followed.

CASE XXXVI.—F., four years old, suffered with pneumonia of the lower part of the right lung. When first seen the temperature was 104°, and within a few hours after the ice was applied it fell to 98°. However, it rose again to 101°, and continued at this point for about thirty-six hours, when it fell to 96.5°, and remained subnormal.

CASE XXXVII.—F., thirty-eight years of age, had pneumonia over the left axillary base. The woman was seen first on the fourth day of her illness, when her temperature was 103°. The ice-bag was applied, and by midnight her fever had fallen to 99.6°, and the ice-bag was removed. The temperature rose at once, and the next morning it was 101.5°, and in the evening 104°. No ice was again applied, but the temperature gradually fell, so that on the evening of the next day it reached 99.2°.

CASE XXXVIII.—M., nine years of age, had pleuro-pneumonia of the left base, and a temperature of 103°; ice was applied, and in thirty-six hours it had dropped to 99.4°, and the ice was removed. In eight hours it had risen again to 104°. Reapplication of the ice caused the temperature to sink to 98.4° in sixteen hours, after which it did not again rise above 100°.

CASE XXXIX.—M, twenty-six years old, had pneumonia of the left base. The man was seen on the third day, when his temperature was 103°. An ice-bag was applied, and the temperature fell promptly to 97.6°. On the morning of the fourth day the ice was removed, and the temperature rose directly. When it reached 100° the ice-bag was replaced. The rise, however, continued up to 102°, from which point the temperature fell again to the normal on the fifth day.

CASE XL.—F., six and a half months old, had broncho-pneumonia of the root of the right lung, with a temperature of 105°. Twenty-four hours after the

application of the ice-bag the pyrexia fell to 101.4° The ice was then removed, and the temperature rose to 103°, but fell again to 100.4°. A sudden rise to 105.6° was caused by an implication of the root of the opposite lung. The ice-bag being applied to the new focus of inflammation, the fever fell to 98.8° in nine hours, and after a few small transitory rises, recovery slowly occurred.

CASE XLI.—F., fifteen years old, had an attack of broncho-pneumonia, with general bronchitis. There was dulness over the whole front of the left lung, with a temperature of 104.2°, on January 24, 1885, when the girl was first seen. Poultices were applied, and the next day she was worse, the temperature having risen to 105°. Venesection—ten ounces—gave great and immediate relief. The temperature fell 1°, and on the evening of the next day (the third in the hospital) the child was worse than ever, her temperature reaching 105.6°. An ice-bag was now applied over the whole left front of the chest, and on the morning of the next day (the fourth) the thermometer registered 98°. In the afternoon, however, it rose again to 105.8°. Examination showed that the resonance over the left front was remarkably improved, but fresh crepitation and bronchial breathing had appeared in the axillary region. The ice-bag was shifted to this region, and again the temperature fell to 98°. It rose once more to 103°, and fell again to 98°. On the fourth day of the ice-treatment there was another rise to 104.2°, which proved to be due to the implication of the opposite apex. A second ice-bag was applied here, and in twenty-four hours the apex was normal, and the temperature had fallen to 96.7°. After this convalescence was uninterrupted.

CASE XLII.—M., thirteen years of age, had pneumonia of the left base. The boy was first seen on the fourth day of the disease, when the temperature was 105.8° Five grains of quinine were given, and the next morning the temperature was only 100.6°, but in the afternoon it rose to 104.2°, when an ice-bag was applied over the inflamed lung. The rise continued until 6 P.M., when 105.4° was reached, and thereafter there was a gradual abatement until the seventh day, when the temperature was 99°, and the ice-bag was removed.

CASE XLIII.—F., twenty years old, was first seen on the seventh day of an attack of pneumonia of the right base, at which time her temperature was 104.4°, and an ice-bag was applied. There was a fall of three degrees during the next few hours, but on the following morning the temperature stood again at 104°, and remained between 103° and 104° for three days. On the tenth day it suddenly fell to to 98°, and the ice was removed. On the eleventh and twelfth days the pyrexia rose to 102°. Examination now showed a fresh inflammation at the base of the opposite lung. The ice was applied to this spot, and in three days the physical signs had disappeared, and the woman was convalescent.

CASE XLIV.—M., twenty-five years old, was admitted on the fourth day of an attack of pneumonia of the right apex, and was seen first on the following day, with a temperature of 103.6°, and in a semi-maniacal condition. An ice-bag was applied to the chest, and on the evening of the eighth day the temperature dropped to 99°, and the ice was removed.

CASE XLV.—F., twenty years old, was seen first, with pneumonia of the right apex, on the fifth day, and with a temperature of 104°. By the next morning the ice had depressed the temperature to 100°, but during the day it rose to 102°. The respiration now rose to 74, and some cyanosis appeared. It was found that the lung in front and behind was dull to the base of the angle of the scapula. On the next day (the seventh) the temperature was only 102.5°, but the respiration had risen to 100, and the right lung was involved throughout. Both cheeks were markedly cyanotic, and the expectoration was of a "prune-juice" character. The whole right chest was enveloped in ice, and the patient received four ounces of brandy daily, and a mixture of ether and ammonia every four hours. On the eighth day the temperature was 101.5°, but the respiration ranged from 88 to 100. On the ninth and tenth days the temperature remained about the same, but an extraordinary improvement occurred in the physical signs. On the latter day the temperature suddenly fell to 97°; the ice was removed, and convalescence supervened. "It must be allowed, I think," it is stated, "that in this case the ice was of the greatest service. It is hardly too much to say that it saved the patient's life."

CASE XLVI.—M., aged seven, had previously suffered from empyema, the right lung being entirely collapsed. The boy was first seen on the second day, when his temperature was 104°, and respiration 56. The pneumonia was believed to exist in the left lung, over which ice-bags were applied. The temperature fell four degrees before the next morning, but gradually rose somewhat during the subsequent forty-eight hours. On the third day the lips and cheeks were livid. This was not surprising, for the right lung was useless. On the fourth day the respiration was 60; on the fifth day the temperature was 102°, and respiration 58. On the seventh day the temperature fell to normal, and the ice-bag was removed.

CASE XLVII.—M., five years old, was admitted on the third day of his illness. The next day his temperature was 104°, and respiration 50. No signs of pneumonia could, however, be discovered until the sixth day, when it was found that the upper part of the right lung was consolidated. The ice-bag was applied until the eighth day, when crisis occurred.

CASE XLVIII.—M., about forty years old, had pleuro-pneumonia of the right base and pleurisy of the left side. On the second day the temperature was 104°, and respiration 32. The ice-bag was applied. Crisis occurred on the fifth day. This patient also had a very feeble heart. There followed a good recovery.

CASE XLIX. (Reported by Mr. Back, *Lancet*, August 29, 1885).—M., thirty-five years of age, was seized with double basic pneumonia May 31, 1885; the temperature was 104°, the respiration 48. Hot flaxseed-meal poultices were applied, and 5 ♏ of tincture of aconite, fl.ʒss of antimonial wine, and 5 ♏

of ipecacuanha wine were ordered every four hours, besides a diet of milk and beef-tea. On June 2d, the patient was much worse; the temperature was 106°, and the respiration 60; he was delirious, with profuse diarrhea, and was passing urine and feces involuntarily. On the 3d the diarrhea had ceased, but the man continued very delirious, and had a temperature of 106° and respiration 80. The whole chest was sponged with cold water every hour. On the 4th the temperature was 103°, the respiration 40, and the delirium was less. On the 5th the temperature was 100°, the respiration 34; the application of cold was continued. On the 6th the temperature was 99°, the respiration 30 From this time on the patient gradually convalesced.

CASE L. (Reported by Dr. F. Gundrum in THE NEWS, October 12, 1892, p. 473).—F., nineteen years old, suffered from pneumonia of the whole of left lung, with a temperature of 106° and a respiration of 46. On the first day the woman was wrapped, from chin to toes, in woollen blankets wrung out of cold water (50° F.), and changed every 30 minutes. At 1 o'clock the next morning the temperature was 102°; at 6 A. M., 98°, and respiration 16. She was now thoroughly rubbed, put in warm blankets, hot bottles placed about her feet, and half an ounce of brandy administered. This treatment aborted the disease completely.

The histories of these fifty cases open up many points of interest in the discussion of the influence of ice in the treatment of acute pneumonia, and as pertinent to this subject I will append the following comments:

1. *The resolving power of ice on the exudation.* This is a marked feature in its therapeutic action, and must be regarded as one of the strongest factors in its curative influence. This can at least be partly explained on the following basis: The most apparent lesion in croupous pneumonia is an enormous distention of the pulmonary capillaries, with partial or complete stasis of the blood in these vessels, exudation of the fluid constituents of the blood, and diapedesis of white and red blood-cells into the alveoli of the lung. It is well known that cold has the power of contracting the bloodvessels, and from this action one can understand why it should exert a beneficial action in pneumonia, by giving tone to the capillaries, by restoring the normal blood-flow, and thus checking the leakage. But there is often reason for believing that it also dissolves the exudate in the pulmonary alveoli. For example, there may be a pneumonic area in which there is absence of respiratory murmur, with the presence of a flat percussion-note and bronchial breathing—indicating, beyond doubt, that the process has passed beyond the stage of engorgement and into that in which the exudation has taken place into the alveoli; yet the application of ice will, in a remarkably short time, develop a new group of physical signs, such as crepitation, reappearance of the respiratory murmur, diminution of flatness, etc., indicating that a break-down occurred in the exudation. This has not only been observed by myself, but is dwelt on by Dr. Lees, who says (p. 894): "In many cases I noticed a striking arrest in the development of the physical signs," and that the ice-bag "distinctly tends to repress the inflammatory process in the lung."

Influence on symptoms. No less decided is the influence of the ice on some of the most prominent symptoms of pneumonia. The pain, difficult respiration, cough, and expectoration, are remarkably relieved, and the temperature is frequently depressed two or three degrees in the course of half a day. The beneficial influence exerted on these symptoms produces a very agreeable effect, and often makes the ice acceptable to those who, at first, protest against its use. This I have noticed in most of my cases, and it has also been witnessed by others, as will be seen by the histories of the cases that have been reported to me.

Is the ice injurious? My own rather limited experience with the ice-treatment does not show that it is accompanied or followed by any evil consequences, nor have any of those who have reported cases to me observed any such results, although some of them kept the ice applied for two weeks. Dr. Lees says (p. 894): "I have never seen any harm follow from the employment of the ice-bag in pneumonia."

Ages of patients. It is important to note in this collection that the ages of the patients in whose cases the ice was applied varied from infancy to old age—the youngest being six and a half months old, and the three oldest sixty, sixty-five, and seventy-four years respectively.

The results. It may be said, without claiming too much, that the results obtained from the ice-treatment of pneumonia have been good. Out of the fifty cases which I collected but two were fatal, making a death-rate of 4 per cent In estimating this mortality-rate it must be remembered that at least one of the cases (XIII) that died was an exceedingly unpromising one, being a sufferer from chronic lead-poisoning, and also very intemperate; while the pneumonia which caused the death of the other one (XIV) was in all probability an acute exacerbation of an old attack. In Dr. Lees' series of eighteen cases (from XXXI to XLVIII) no deaths occurred, nor did any occur in the eleven cases reported by Dr. Jackson. Moreover, the *Lancet*, of August 10, 1892 (p. 279), refers to an article by Dr. Fieandt, published in *Duodecim*, a Finnish medical journal (an original copy of which I am unable to secure), in which there is an account of 106 cases of pneumonia treated with ice-applications by that gentleman, and notwithstanding that among

these there were ten cases of double pneumonia, and that the epidemic of the disease was rather severe, he had only three deaths, or a death-rate of 2.82 per cent. Adding these cases to those reported in my collection, we have a total of 156 cases of pneumonia treated by means of cold applications to the chest, with five deaths, or a death-rate of 3.20 per cent.

While the number of cases reported here is not very large, it is nevertheless evident that the results of the ice-treatment are much superior to any other with which I am familiar. Thus, according to Osler, the mortality-rate of 1012 cases in the Montreal General Hospital was 20 per cent., while in the Charity Hospital at New Orleans it was 20.01 per cent. Of 1000 cases of pneumonia treated in the Massachusetts General Hospital, from 1822 to 1889, the mortality was 25 per cent. In Dr. Hartshorne's valuable paper on "Pneumonia" it is estimated that the death-rate from this disease in the Pennsylvania Hospital during the years 1884, 1885, and 1886, was a little more than 31 per cent. In comparing the results of the ice-treatment, so far as they go, with those which have been obtained from the treatment pursued in the hospitals named, we find that the former are about eight times better than the latter. It will be of great interest to see by future clinical investigation whether these satisfactory results can be maintained, and if this can be done even approximately, it is needless to say that a pronounced advance in the therapeutics of acute pneumonia has been made.

COUGH OF NASAL ORIGIN, WITH REPORT OF A CASE.

BY MAXIMILIAN HERZOG, M.D.,
LARYNGOLOGIST AND OTOLOGIST TO THE GERMAN HOSPITAL, CINCINNATI, OHIO.

COUGH is, to a certain extent, a purely physiologic phenomenon, intended to support and supplement the action of the ciliated epithelial cells lining the respiratory tract. It is the function of these cells to keep up a current in the direction from the central organs of respiration—the lungs—toward the periphery, in order to remove the mucus secreted in the respiratory tract, and with it those mechanical adulterations, including pathogenic and non-pathogenic microörganisms, suspended in the surrounding air, that have gained access to the respiratory tract below the larynx by not having been effectually excluded by those organs especially equipped to do this, namely, the nasal cavities and the nasopharynx.

The act of coughing is considered physiologically as a modified expiration, brought about by reflex stimuli acting upon the pneumogastric nerve, more especially upon its branch, the superior laryngeal. The pneumogastric nerve is to be looked upon as the guardian of the lower parts of the respiratory tract, and, as such, has to prevent detrimental elements from gaining access to the lungs, or to remove by reflex action those that have already gained access.

The act of coughing usually begins with a deep inspiration; then follows an expiration, which is, however, obstructed, in consequence of the approximation of the vocal bands as tightly as possible (more completely than in phonation), by the adductor muscles of the larynx. At the same time the abdominal muscles force up the contents of the abdominal cavity and the diaphragm, which itself contracts; and the air in the alveoli, bronchi, and trachea, which cannot escape through the tightly-closed rima glottidis, is brought under a comparatively high pressure. Finally, the vocal bands relax, the air escapes forcibly, and its current, as it sweeps over the respiratory tract, carries along a certain amount of mucus and particles suspended in it, and, with the assistance of the muscles of the pharynx, etc., delivers it to the outside world.

In perfect health, and when surrounded by pure air, cough plays an insignificant rôle, very much subordinate to such physiologic processes as, *e. g.*, the act of micturition or that of evacuating the contents of the intestines. In many diseases, however, as, for instance, in croupous pneumonia, cough is the most important factor in ridding the alveoli and bronchioles of the pathologic products of disease. While a cough of this kind may be styled a necessary and beneficial reflex phenomenon, there are certain kinds of cough that are, from a physiologic as well as a pathologic point of view, of an absolutely useless character, dependent upon a reflex from a distant point, an irritation that, *de facto*, does not interfere, either sufficiently or not at all, with the act of respiration, and, therefore, cannot be favorably influenced by cough. Cases have been reported of cough of reflex origin from the liver and spleen (Naunyn), from the stomach and vesica urinæ (Krimer), from the external integument of the thorax (Leyden), from any and every part of the integument (Strubing), from the transmission of ordinary stimuli to the nerves of special sense (Ebstein)[1].

During the last ten years it has been generally recognized that the nose is among those organs that may give rise to most obstinate cough of reflex origin. That pathologic changes in the nasal cavities constitute one of the most fruitful sources of various reflex phenomena is a fact that has been recognized for some time. The first, however, to mention this more elaborately and to lay especial stress upon it

[1] Quoted in Gottstein, Die Krankheiten des Kehlkopfes, 1890.

was Voltolini,[1] whose views were afterward confirmed by reports of cases by B. Fraenkel, Hænisch, A. Hartmann, M. Schaeffer, Bresgen, J. Herzog, and especially Hack,[2] who reported a number of instances and advanced a theory in explanation of reflexes of nasal origin. While the theory of Hack has been almost completely abandoned, he may still claim the merit that his paper was the most complete and most extensive on the subject up to his time. Among Hack's cases of reflex neuroses of nasal origin was also one of reflex cough dependent upon the presence of a nasal fibroid polypus. Carl Seiler[3] followed with the report of two cases of reflex cough of nasal origin. John N. Mackenzie[4] next recorded his experiences on the subject. Thrasher[5] reported two cases before the meeting of the Mississippi Valley Medical Association, at Louisville, in 1890. One case is also reported by Scheinmann,[6] who tabulates and reports thirty-two cases of reflex neuroses of nasal origin occurring at the Throat and Nose Clinic of the University of Berlin, and whose extensive paper is undoubtedly the best contribution upon the subject which has appeared during recent years. Whether F. C. Heath, who contributes a paper on "Nasal Reflexes," in the *American Lancet*, Detroit, 1891, reports any new cases of reflex cough of nasal origin I am unable to state, as his paper has not been accessible to me.

Many of the authors who have written upon the subject of reflex neuroses of nasal origin point out the fact that it is almost universally in patients of a neurotic taint that these neuroses develop. Under some conditions the nasal cavities may show extensive pathologic changes; there may be new growths and points and surfaces compressing each other, without the appearance of any reflex phenomena. On the other hand, in individuals of anemic and neurasthenic type, slight changes, small areas of contact may bring about serious reflex disturbances. Some authors go as far as to maintain that no changes in the cavum narium of the kind usually producing reflex neuroses will do so unless developed upon the soil of an already disturbed nervous equilibrium.

If the normal nasal mucous membrane of an individual in perfect health, at the time not the subject of cough, and not accustomed to a prolonged course of nasal treatment, be gently irritated by a nasal sound, one will almost universally notice a twitching of the facial muscles of the side touched, a dilatation of the vessels of the nasal mucous membrane, and epiphora. If the irritation be more intense (such as may be caused by a weak electric current), sneezing, and, very often in nervous individuals, coughing will be excited. This observation is in favor of the claim of those who maintain that reflex neuroses of nasal origin only or almost universally develop on a neurotic soil. The case herewith reported may also be cited in support of this view:

M. B., an unmarried girl, twenty-one years old, of good family history, was said to have had "curvature of the spine" when she was four or five years old, for which she was treated, and got well. She suffered occasionally with pain in the back. For two or three years she had had a constant cough with a feeling of irritation and a sensation of the presence of a foreign body in the throat, of which she wanted to get rid. All treatment directed against the cough had failed to benefit her and ameliorate the constant irritation. The patient also stated that she sometimes had pain in swallowing, and had been told that she breathed through her mouth during sleep, though she did not snore. The sense of smell had always been good.

The girl was small and slender, looking less than her years. She limped slightly in walking, in consequence of a deformity of the spinal column in the lumbar region (probably a scoliosis—no direct examination of the spine having been made), and was anemic, restless, and nervous.

The nasal mucous membrane was rather pale and anemic, and in a few discrete spots appeared atrophic. In the left nasal cavity, about three centimeters behind the anterior nares, close to the floor, was a mucous band, connecting the lower turbinated bone with the septum, stretching across and largely obliterating the inferior meatus. This band was from 3 mm. (at its middle part) to 5 mm. (at the two points of attachment) wide and of the same color as the neighboring parts. On the right side the mucous membrane of the lower turbinated bone showed some hypertrophy. The posterior extremity of this structure also showed a slight amount of thickening. Tenacious mucus covered the roof of the naso-pharynx. The pharyngeal mucous membrane was granular; on either side two granular bands extended from the plicæ salpingopharyngeæ downward; the band on the right side being especially well marked. Both tonsils were somewhat hypertrophic, the right one especially so. The epiglottis was imbedded in a hypertrophic lingual tonsil; the larynx was otherwise normal.

A diagnosis was made of adhesion in the left inferior nasal meatus, with chronic granular and lateral pharyngitis, and hypertrophy of the pharyngeal and lingual tonsils.

In view of the numerous hypertrophies found in the pharynx, it seemed justifiable to consider them as the cause of the cough, and they were consequently treated topically for a long time. The band of adhesion in the left nasal cavity was, on ac-

[1] Voltolini: Anwendung der Galvanokaustik, etc., Wien, 1871.
[2] Hack: Berl. klin. Wochenschr., 1882.
[3] Archives of Laryngology, vol. iii.
[4] Amer. Journ. Med. Sci., July, 1883.
[5] Cincinnati Lancet-Clinic, October 11, 1890.
[6] Scheinmann: "Zur Diagnose und Therapie der Nasen Reflexneurosen," Berl. klin. Wochenschr., 1889, pp. 295, 327, 399, 425, 471.

count of its situation and color, readily overlooked, and was only discovered when the patient came to my clinic. Touching the mucous band connecting the lower turbinated bone with the septum did not excite a fit of coughing. This observation did not, however, at all influence me in my belief that in the adhesion I had found the cause of the reflex cough. It has frequently been noticed that pathologic changes in the nose act as the cause of reflex neuroses that disappear after proper surgical interference or other therapeutic measures, even if, on touching these structures or tender points, as the case may be, the reflex is not always excited. The result of such interference in the case reported in this paper proved the correctness of the assumption.

Two days after the examination the lower parts of the left nasal cavity were treated with a ten per cent. solution of cocaine, and the band of adhesion, which now appeared very much on the stretch, was divided by a galvano-cautery platinum knife. No pain was experienced, and no hemorrhage followed. Insufflation of europhen was practised after the operation.

On the following day the patient reported that the cough had disappeared completely. The good effect continued. A ferruginous tonic was prescribed, but the pharynx was not touched.

The nasal mucous membrane at the points of cauterization healed kindly; the cough did not reappear.

The patient, after taking iron for some time, felt better than she had for years. She looked well, had gained in weight, and her cheeks presented a rosy color. The hypertrophies of the pharynx still persisted, as they had not been interfered with surgically. The cough, which had left the patient directly after the operation, had not reappeared.

The case is instructive not only as one of cough of nasal origin, but also because it shows that hypertrophies in the pharynx, which often give rise to reflex symptoms, may not do so, even in a nervous subject in whom structural changes (in our case an obstructive adhesion) in the nose will do so.

In conclusion, I would like to state that it is my belief that the adhesive band in this case originated from ordinary hypertrophies, such as are found in almost every case of rhinitis hypertrophica. Probably a point of contact was established between the mucous membrane of the turbinated bone and that of the septum, a slight ulceration occurred in consequence of the hypersecretion dependent upon the hypertrophy, and the adhesion was formed at the point where two ulcerated surfaces were in contact. Later on the hypertrophy underwent a retrograde change (there being, already, spots of a somewhat atrophic character noticeable at the time the patient presented herself), and the mucous membrane contracted, but left behind a band of adhesion at the place that formerly had been a point of contact, the band acting as a source of reflex cough.

No. 50 W. NINTH STREET.

CLINICAL MEMORANDA.

TRAUMATIC EMPYEMA COMMUNICATING WITH THE BOWEL.[1]

BY N. T. DULANEY, M.D.,
OF BRISTOL, TENN.

E. G., thirty years old, a conductor on a freight train, while engaged in the discharge of his duties was shot with a 38-caliber pistol at short range, the muzzle of the pistol being within a few inches of his body. The ball entered his body in front, at a point about five inches below the left nipple, and one inch and a half outside the left nipple line. The ball could not be located for several weeks. I saw the patient nearly a month after the reception of the injury, in consultation with his attending physician, Dr. M. M. Butler, of Bristol, Tenn. I learned that the patient had not had very much fever, the temperature varying from 99° to 101°; the pulse from 90 to 100, and not sthenic. When I saw the man the temperature was 102°. There was very little pain; no cough, nor had there been any at any time; no bloody expectoration to indicate a wound of the lungs; little or no appetite. The bowels were torpid; the breathing somewhat hurried and more pronounced on the right side. The patient was considerably emaciated.

Physical examination revealed extensive dulness over a large portion of the left chest, amounting to flatness, with absence of normal respiratory sounds, and increased percussion-resonance and exaggerated respiratory murmur on the right side. The case not improving, but symptoms of septicemia becoming more pronounced, I was again called twelve days later. Physical examination disclosed the same condition as before, but somewhat aggravated and with the addition of a distinct prominence as large in circumference as the mouth of an ordinary teacup, situated on the back, to the left of the spine, and corresponding to the eighth and tenth ribs in this region. With this as a guide, the patient was anesthetized and a vertical incision about three inches in length made through the prominence, down to the ribs. There was now a gush of very offensive, dark fluid, amounting to about a quart, which seemed to be a mixture of serum, pus, and the *débris* of disintegrating tissue.

The ball was found just outside the chest under the deep muscles of the back, in its passage having broken a rib—the tenth, I think—about one and a half inches from the spine. A portion of the same rib was broken, but not detached, for a distance of about an inch, and was hanging loosely in the chest in such a way as to obstruct the opening in the chest-wall. This being removed with forceps, the opening was at once filled by a mass of dead tissue forcing its way out. I began drawing this out and continued until no more came, when I had as much as I could hold in my two hands. It was a stinking mass of dead tissue, consisting, I think, of pleura and lung and connective tissue. It was dark, almost black, thickly covered with grayish, ash-colored spots as large as a wheat grain and larger. Having removed all of this dead tissue, the cavity was washed

[1] Read before the Tennessee State Medical Society, April 11, 1893.

out with a weak, warm solution of carbolic acid, and the wound dressed with iodoform-gauze, absorbent cotton, and bandage, and the patient quieted with a dose of morphine hypodermatically. The temperature steadily declined, the wound being dressed every day and the cavity washed out with warm water, usually with a little carbolic acid added.

The day after the operation we used an enema to evacuate the bowels. The nurse, a negro man, said that the water of the injection passed out through the opening in the back. This being doubted, the physician in charge tested it the next day by injecting into the bowel water colored with potassium permanganate, and he found that the fluid injected into the rectum passed freely and promptly out through the opening in the back. This was an unexpected and perplexing complication.

From this time on the wound was dressed and washed out every day for some weeks, and for three or four months fecal matter passed out through the wound freely, especially when the discharges were thin.

Two months after the accident I dressed the wound, and a mass of fecal matter as large as a hulled walnut passed out. The patient slowly but steadily improved, and is to-day on duty as a railroad conductor, looking well and weighing 193 pounds, the fistula having entirely closed.

This is an interesting case, because:

1. There were no rational signs pointing to injury of the lung. There was no blood expectorated, no cough, and at no time was the sputa characteristic of pneumonia. The case went on for seven weeks, the chest filling with serum and pus, and a large amount of tissue undergoing necrosis within the chest. Yet, aside from the physical signs and the altered breathing, there was nothing to indicate the exact nature of the case. It is true, the persistent fever, emaciation, loss of appetite, restlessness, and failing strength indicated something seriously wrong, but it remained for the physical examination to determine the nature of the condition.

2. The ball in its passage had so damaged the diaphragm and the bowel at some point in contact with it as to lead to inflammatory adhesion, followed by sloughing, and resulting in a fecal fistula. With all this, there was no bloody or mucous discharge from the bowels, and no symptoms indicating injury of the bowel until the water injected into the rectum was seen to pass out through the wound in the back.

In regard to the management of this case, while no new principle is involved, the result forcibly emphasizes the two or three main points in the local treatment of such cases, whether of idiopathic or of traumatic origin —namely, cleanliness, or antisepsis, if you please, with thorough drainage. These given, unless your patient is exhausted from protracted disease, or septicemia, or some undermining constitutional disease, you are in most cases warranted in making a favorable prognosis.

It is astonishing how promptly convalescence sets in after the inauguration of such treatment, if not too long delayed, or if the ordinary *vis medicatrix naturæ* is present to assist you. Of course, constitutional treatment, based on general principles, is not to be neglected.

The distance from the point of entrance of the ball to the point where it was cut out around the chest is eight and three-quarters inches.

CYSTIC DEGENERATION OF ENLARGED SUBMAXILLARY GLANDS.

BY D. W. HAYS, M.D.,
OF OSAWATOMIE, KAN.

MRS. B., born in 1819, when about thirty years old noticed a "kernel" under the right jaw, which, however, did not subside in the usual manner, but continued to slowly enlarge, though it remained freely movable. It gave no inconvenience or pain, and only after it had attained considerable size was anything done to check its growth or produce its absorption. Then, only local applications of tincture of iodin and the like were used until 1871, when the mass had become a little larger than a man's fist. A diagnosis of multilocular cyst was made, and removal advised. The opinion was expressed that the growth would not undergo further enlargement, or shorten the woman's life, and she therefore refused operative interference. Contrary to prediction, the mass continued to increase in size, and even more rapidly than before, so that at the time of death, Nov. 19, 1892, at the age of seventy-three years, it measured fifty inches in circumference and, after removal, weighed forty-seven pounds.

The mass was easily removed, being encapsulated and attached only to the integument and connective tissue. The superficial veins were numerous and quite large; the arterial supply was small, and the vessels were not traced to their origin. One large branch from the facial nerve, with numerous dividing branches, was found on the upper part; other nerve-supply was not sought. The inferior maxillary bone had been pushed or dragged forward, and had been absorbed from below until it presented a decided upward curve.

The contents of the tumor were found to be a greenish-yellow fluid. The walls were, at some portions, thinned until they were little more than half an inch thick; at no

place were they more than an inch and a half thick. The tissues of the walls seemed to be thoroughly disintegrated and of a cheesy consistency. A section from the apparently best organized portion showed nothing distinctive under the microscope, except some broken-down glandular tissue.

The accompanying photograph was taken some eight or ten years ago, and does not show the actual size at death; it would have shown better if it had been suspended.

I think this case worthy of record on account of the large size and situation of the growth, and especially because of its evident origin, as it is quite certain, from the best history that I can obtain of its commencement, that it was an enlargement of one of the submaxillary glands that became cystic by degeneration.

MEDICAL PROGRESS.

A Case of Diphtheric Croup in which a Tracheotomy-tube was Worn for Sixty Days.—At a recent meeting of the Philadelphia Academy of Surgery, DR. H. R. WHARTON reported the case of a child eighteen months of age, with diphtheria, in which an intubation-tube was introduced for the relief of dyspnea. At the end of fifteen hours the instrument was coughed up and the dyspnea returned. Tracheotomy was then performed, with relief to the dyspnea, and the patient subsequently did well.

On the tenth day after the operation the tracheotomy-tube was removed and the patient breathed comfortably for a time, but after fifteen or twenty minutes the dyspnea recurred and became so urgent that the tracheotomy-tube had to be replaced.

Attempts were made to remove the tube at intervals of a day or two for a week or more, with a similar result. Four weeks after the operation the child was etherized and the tracheotomy-wound was dilated, so as to expose the wound in the trachea. It was then found that there were a number of masses of granulation-tissue springing from the trachea in the region of the tracheal incision; these were removed with forceps and scissors, and the tracheotomy-tube was again introduced. After waiting a few days another attempt was made to remove the tracheotomy-tube, but this also failed. An intubation-tube was introduced upon the removal of the tracheotomy-tube, and was worn for some hours, and upon its removal the child was able to breathe comfortably for five hours; but after this time dyspnea recurred, and the tracheotomy-tube was again introduced. After several trials of the intubation-tube, it was finally abandoned. The patient was again etherized, the tracheotomy-wound enlarged, and a number of masses of granulation-tissue removed, and their bases were touched with the solid stick of silver nitrate. An intubation-tube was then introduced, and was worn for twelve hours, when it was coughed up. Thinking its expulsion was probably due to the irritable condition of the larynx and trachea, resulting from the recent operation, the tube was not replaced for forty-eight hours. To keep the tracheotomy-wound open, so that the tracheotomy-tube could be introduced, if it were required, an obturator was introduced into the tracheotomy-wound. The intubation-tube was worn for four days and was then removed, and the obturator was retained in the tracheotomy-wound for three days longer, and was then removed. The child after this time had no further difficulty in breathing, and the tracheotomy-wound, after the removal of the obturator, rapidly contracted and healed. The patient wore the tracheotomy-tube for a period of sixty days.

Rupture of the Uterus during Labor, with the Placenta in the Abdominal Cavity.—WASTEN (*St. Petersburger medicin. Wochenschrift*, No. 19, 1893, p. 173) has reported the case of a woman, twenty-nine years old, who was delivered of her ninth child with the aid of forceps, after a not unduly protracted or difficult labor. The child was dead. The placenta had not been expelled. Examination showed the uterus to be contracted, but the placenta was in the abdominal cavity. Notwithstanding the precarious condition in which the woman was, celiotomy was undertaken. Cocaine was injected in the line of the contemplated incision and chloroform was cautiously administered. The portion of the umbilical cord in the vagina was cut away, and the placenta, with numerous blood-clots, was removed from the abdominal cavity. Then the uterus was amputated above the vaginal portion and the broad ligaments and large vessels ligated. The stump was gently cauterized with the hot iron and replaced in the abdominal cavity. Drainage *per vaginam* was provided for and the wound closed. Convalescence was attended with no noteworthy complication, other than the occurrence of an endometritis in the remaining portion of the cervical canal and the formation of an exudate in the right iliac fossa. It was found that the rupture had involved the anterior wall of the uterus in the situation of the placental insertion. It is thought to have taken place spontaneously.

Qualitative Variations in the Knee-jerk.—BENEDIKT (*Neurologisches Centralblatt; Deutsche medicin. Wochenschr.*, No. 19, p. 464) describes four varieties that the knee-jerk may present: (1) It may be clonic; several jerks rapidly succeeding one another after a single tap upon the tendon. This may occur in cases of palsy, of myelitic or cerebral origin, and with spastic conditions of spinal origin. (2) The knee-jerk may be paradoxic, the leg being jerked in flexion instead of in extension. This has been observed in a case of tumor of the roof of the fourth ventricle at the level of the striæ acusticæ, presenting headache, static vertigo, and unilateral nervous deafness, to which melancholic apathy was subsequently added. A sub-variety of this form consists in the occurrence of a flexor jerk following the extensor jerk. (3) Percussion of the quadriceps tendon is in some cases followed by contraction not only of the extensors or flexors of the knee, but also of some of the muscles of the trunk and of the opposite side of the body. (4) The knee-jerk may be tonic; the leg is slowly extended, but fails to fall back to its original position. There is, however, no actual spasm of the quadriceps. In cases of marked lateral sclerosis, with greatly increased reflex irritability, percussion of the quadriceps may induce tonic extensor or flexor spasm. (5) The knee-jerk may be delayed; or (6) it may become exhausted.

Primary Sciatica.—GIBSON (*Lancet*, No. 3633, p. 860) has reported the results of an analysis of 1000 cases of

primary sciatica, with especial reference to the treatment of 100 cases by acupuncture. Of the whole number, 884 cases occurred in males; 116 in females. In 443 the right side, in 483 the left side, and in 74 both sides were affected. In 14 cases the affection was first observed between the ages of 15 and 20; in 159, between 21 and 30; in 310, between 31 and 40; in 248, between 41 and 50; in 187, between 51 and 60; in 71, between 61 and 70; in 11, between 71 and 80. In 132 there was accompanying lumbago. Of 100 consecutive cases of sciatica treated by acupuncture, 56 were cured, 32 were much improved; 10 were improved; and 2 were not improved. A single spear-pointed needle two and a half inches long, was employed. This was plunged into the nerve itself, but immediately withdrawn. The nerve should be pierced about five times over the parts where there is pain on pressure; this can be accomplished through one cutaneous puncture by partially withdrawing the needle and entering it again at a somewhat different angle. A single puncture may suffice. The measure may, however, be repeated at intervals of a few days. Rest is an essential factor in the treatment. A gouty or a rheumatic diathesis should receive appropriate attention.

Renal Hematuria, Lasting Twenty Years.—WETMORE (*Maritime Medical News*, vol. v, No. 5, p. 65) has reported the case of a man, sixty-four years old, who for twenty years, intermittently, passed blood in the urine. The first attack occurred in the winter, without known cause, and lasted for two months. The second attack occurred three or four years later, and also commenced in the winter and lasted for two months. The attacks gradually became more frequent and lasted longer, the urine for six years not having been free from blood for more than a few weeks at a time. There was no family history of carcinoma or tuberculosis, and no personal history of malaria. There had never been colic. In some attacks there were pain and tenderness in the right loin and pain and swelling in the right hip and lower extremity, and swelling of the left lower extremity. The urine contained a moderate amount of albumin and many red blood-corpuscles and some blood-casts. An ultimate diagnosis was not arrived at.

Acute Pulmonary Hypertrophic Osteoarthropathy.—At a meeting of the Société Médicale des Hôpitaux, MOINARD (*La Semaine Médicale*, No. 13, 1893, p. 247) reported the case of a child, six years old, which three months after an attack of meta-pneumonic purulent pleurisy, presented deformity of the terminal phalanges, characterized by lateral thickening of the extremities of the fingers, which looked like drum-sticks. The nails were curved longitudinally and transversely like a parrot's beak or a watch-glass. They were abnormally deep red in color and extremely friable, but not striated. There was no other bony lesion. A second case occurred in a girl of five. The sequence and the lesions were quite like those in the first case, and the deformity disappeared with the cure of the pleuro-pulmonary condition.

MARFAN related that he had observed three cases of similar kind; one of empyema, one of bronchiectasis, and one of pyelo-nephritis.

THERAPEUTIC NOTES.

The Treatment of Suppurating Tuberculous Tissues.—A new treatment for suppurating tuberculous tissues has lately been suggested by JEANNEL, of Toulouse. The diseased tissues are freely exposed and, after the surrounding healthy parts are protected by a damp towel, the diseased structures are thoroughly sponged with a tampon of hydrated cotton-wool previously placed in a boiling saline solution. The application should be made to all irregular surfaces. After the procedure has been repeated five or six times it may be concluded that all of the tubercle-bacilli present have been brought into contact with the boiling solution, and have thus been destroyed. It is stated that this method has been employed in some cases in which amputation seemed to be the only remaining resource, with a satisfactory result and without mutilation.—*Medical Press and Circular*, No. 2820, p. 547.

Bromoform-intoxication.—DEAN (*Lancet*, No. 3636, p. 1062) has reported the case of a girl, four years old, with whooping-cough, for whom was prescribed a four-ounce mixture, containing sixty minims of bromoform, and of which it was directed that two drams should be taken every three hours. In the course of the treatment the physician was hastily called to see the child and found it with pin-point pupils, livid, and breathing somewhat stertorously. On inquiry it was learned that the attendants had failed to thoroughly shake the mixture before its administration, and that, as a consequence, the child had received with the last dose from the bottle about fifteen or twenty minims of bromoform. The stomach was evacuated by means of a pump, the contents smelling strongly of bromoform. Strong coffee was injected into the bowel, and a small dose of apomorphine injected beneath the skin, and the battery employed. The child slowly recovered and was shortly quite well.

For Tuberculosis.—

℞.—Iodoformi . . . . . gr. xx–xl.
Essentiæ eucalypti
Essentiæ terebinthinæ
Essentiæ guaiaci
Creasoti . . . āā f℥j.—M.

S.—By inhalation or spray; or from five drops upward
PETRESCO, *La Roumaine Méd.; Münch. med. Woch.*

Calomel for Gout.—GRIMM (*Deutsche medicin. Wochenschr.*, No. 17, 18; *Wiener medicin. Presse*, 1893, No. 2, p. 818) has successfully employed calomel in a single large dose, in the treatment of acute and subacute gout. The result is ascribed to the stimulation of peristaltic activity, as it is known that an attack of gout is often preceded by intestinal torpor. Yellow mercuric iodid was found to act even more energetically than calomel.

To Allay the Craving for Alcohol.—

℞.—Tinct. capsici . . . . f℥ij.
Tinct. nucis vomicæ
Acid. nitrohydrochlor. dil. āā f℥j.
Infus. gentian. . . ad f℥xij.—M.

S.—Two tablespoonfuls as required.
The Practitioner.

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OF MEDICAL SCIENCE.

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SATURDAY, JUNE 24, 1893.

THE REPORT OF THE COMMITTEE ON REVISION OF THE CODE.

THE MEDICAL NEWS cannot agree with either the arguments or the recommendations of the majority of the Committee on Revision of the Code of the American Medical Association, in so far as these apply to the regulations governing the conduct of physicians. We have already stated our belief that the paragraphs referring to the conduct and obligations of others than physicians have no proper place in the Code; and in this we are at one with the majority of the Committee. When, however, that majority recommends that physicians should be permitted to patent mechanical devices, and to consult with all "legalized practitioners," we must emphatically dissent. On these two propositions the coming battle is to be fought; and the lines should be distinctly drawn.

As to the patenting of instruments, the objections are many; and the alleged parallel with copyrighting of books does not hold. The relation of an author to his readers is that of teacher to pupil. He devotes much time and study to research, literary and otherwise, and expresses the results in a certain manner. For this he receives a compensation, often quite inadequate to the labor performed. [We are speaking now, of course, only of the best books; not of the books written with paste-pot and shears.] That compensation is exactly parallel with the fee paid lecturers and demonstrators by their pupils. It differs from a royalty on a patent in that it is not paid for *permission* to do certain things, but for *instruction* how to do them. For example, one might pay a fee for instruction in the performance of intubation; but this would be very different from a royalty on the instruments used.

The copyright has a further most important aspect, as security to the publisher that, having expended certain sums and incurred large risks in the preparation of a book, his investment shall not, in case the book proves successful, be stolen by others who have taken no risk. Beyond this, too, it protects an author from misrepresentation through careless book-making or unauthorized omission or addition; and thus protects the student from being misled.

Patents, on the other hand, are in the nature of tribute. They have invariably a tendency to unduly increase the cost of an instrument, to restrict its application, and to prevent its improvement. The only thing to be urged in their favor is the increased revenue to the owner of the patent. No better illustration of the purely commercial purpose of patents can be given than the history of the "pneumatic cabinet," for which at first a yearly rental was demanded equal to the sum for which the apparatus was afterward sold outright when its claims were found to be exaggerated.

If the sole purpose of the medical practitioner is to make all the money possible out of medicine, then let him patent his instruments, as any other tradesman would. Let him also patent his prescriptions if possible; for there is no essential difference, moral or intellectual, between altering the curve of a knife-blade and altering the proportions of calomel and jalap in a powder. The true parallel is that between patented medicines and patented instruments; not between patented instruments and copyrighted books.

Should the wise restriction of the Code be abrogated, what a delightful time we can expect when Professor Biggun hauls Doctor Greathead into court for infringing the patent of his obstetric forceps or his nasal cotton-holder. The "Prioritāt-streiten" of our Continental colleagues will sink into insignificance. And what a field for expert testimony! If Professor Biggun's students should swear that he lectured on the instrument in 1880, who knows but

that Doctor Greathead will exhibit a picture of it in an Italian tome of 1654?

Supposing the physicians of America to be anxious to lose all dignity and self-respect in a mad scramble for the Almighty Dollar, certainly there is but one means more effectual than the patenting of mechanical devices, and that is offered by the proposed provision as to consultations.

The special plea of the majority of the Committee that to consult with an irregular does not mean to hold a regular consultation equals in logic and humor the old conundrum which declares a door not to be a door when it is ajar.

We are not opposed to specialists or specialism; we believe in both; but we are opposed to that narrow view which places the specialist as a god upon a pedestal of superior wisdom, and makes the family physician but a nurse, or at best a clinical clerk who rehearses a history. No specialist worthy the name but consults with the attending physician, actually as well as nominally. If any refuses to do this, he is an excellent man not to send patients to. The attending physician is the one responsible for the management of the case, whether his consultation be in a case of cataract, or a case of ovarian tumor, or a case of enteric fever. He selects the consultant in each instance for the latter's special knowledge and experience in that particular class of cases. And whether the outcome of the consultation be an operation by the surgeon or the bathing of the patient by the nurse, in each instance the one who performs the work does so as the agent of the attending physician and by his consent and direction.

Such being the case, no loophole of escape from the full meaning of consultation can be found in the case of a specialist treating the patient of an irregular practitioner in professional association with the latter. The irregular is the responsible attendant, the specialist is his agent in performing the necessary manipulations. There is no other possible view. We have on other occasions shown why this or any professional relation with quacks or sectarians is unwise and immoral. While for the present merely referring to our former utterances, we may at some future time recur to the subject, for the reason that instruction upon the issues involved seems to be needed.

We trust that those interested in the preservation of professional purity will act on the advice of PRESIDENT MCGUIRE and secure discussion and formal expressions of opinion in their respective County and State societies, in ample time to influence in the right direction the action of the American Medical Association at its next meeting. Those who wish the door ajar for unrestricted consultations will certainly be active and wary; those opposed to this degradation should be no less so.

NEPHRITIS OF MALARIAL ORIGIN.

As our knowledge of disease-causes grows, our perception of disease-complications correspondingly enlarges. It is thus that the number of so-called idiopathic affections becomes constantly less.

It is only since the studies of LAVERAN have incontestably shown that malarial disease is dependent upon the presence of parasites in the blood, and since we have by direct observation and by analogy become familiar with the biology of these minute organisms, that we have learned to recognize and understand the complications and sequelæ of an important group of diseases. While this knowledge has added nothing to our therapeutic resources, it has placed upon a rational basis a method of treatment that, however successful, has hitherto been purely empiric.

We are now fully able to appreciate why anemia should be so common a manifestation in the course of malaria; why under certain conditions of virulent intensity the pernicious forms should terminate fatally; why under other conditions thrombi should form in the bloodvessels and give rise to symptoms as variable as the organs in which the morbid process takes place. By the gradual accretion of knowledge of this kind we are prepared for the announcement that malarial infection may give rise to nephritis. Of this interesting association three instances are reported by STEFANOWICZ (*Wiener klin. Wochenschr.*, No. 20, p. 365). In each the subject had lived in a malarious region; specific organisms were found in the blood; all of the symptoms, including the presence in the urine of albumin and casts, disappeared upon the administration of quinine in antiperiodic doses.

Three explanations of these remote or secondary complications of malaria at once suggest themselves: First, a toxic process; second, thrombosis; third, hemorrhage. Without here entering into a discussion of the various possibilities in the case, we venture to express the view that the first proposition is that which in most cases best explains the conditions present. There is much reason to believe

that in diseases of malarial origin toxic products are set free in the circulation, primarily as a result of the activity of the parasites present, and secondarily as a result of their destructive influence upon the red blood-corpuscles.

The subject is one of practical interest, and worthy of further study. In this connection it is interesting to note that methylene-blue has already been recommended in the treatment of nephritis as well as of malarial disease.

EDITORIAL COMMENTS.

Stretching of the Facial Nerve for the Relief of Trigeminal Neuralgia.—Among the most obstinate of intractable affections are the neuralgias, and of these perhaps the most intractable is that of trigeminal type. At the recent German Surgical Congress, SCHULZE-BERGE (*Deutsche medicin. Wochenschr.*, 1893, No. 22, p. 535) detailed a mode of treatment which, despite the admonition of some distinguished men present, still appears to have much to commend it, and to be deserving of trial before resort to major measures. The procedure consists in stretching the facial nerve of the affected side, in the hope of removing a source of irritation dependent upon the functional activity of this nerve. This practice was carried out in the case of a woman who had suffered for six years from neuralgia of the third branch of the trigeminal nerve, and in which extirpation of the buccal nerve had been unattended with relief. The pain ceased after the fifth day. In the subsequent discussion, Esmarch and Gussenbauer maintained that the stretching should not be performed until other measures, including a course of castor oil, had failed. König pointed out the possibility of permanent paresis as a result of the operation.

The Etiology of Friedreich's Ataxia.—While there is practical unanimity of view as to the clinical history of the affection described by Friedreich and known by his name, or in consequence of deficient knowledge, as hereditary ataxia, there is some diversity of opinion as to the pathologic basis of the disorder. The prevalent view is that the symptoms depend upon sclerosis of the posterior and lateral columns of the spinal cord, though the factor of heredity is probably as often absent as present. SENATOR (*Berliner klin. Wochenschr.*, 1893, No. 21, p. 489) reports a typical case, but dissents from the current view of its pathology. He presents facts and advances argument to show that the symptoms are to be referred to a congenital defect of development of the cerebellum, to which the changes in the posterior and lateral columns may be secondarily added, but are not essential.

Professional Confidence.—*A propos* of our recent remarks on the sanctity of the confidence reposed by patients in physicians (THE NEWS, April 22, 1893, p. 439), it is interesting to note that a bill has been introduced into the Canadian Legislature to place the physician in this connection in the same category as the lawyer, and to regard as privileged confidential communications between patient and physician.

Similar legislation, it appears, has already been enacted in New York and in Michigan. In France it is penal for a priest, lawyer, physician, druggist, or midwife to reveal information into possession of which he or she may have come in the course of professional duty.

Bacillus Aërogenes Meningitidis.—In the cases of cerebro-spinal meningitis hitherto studied from a bacteriologic point of view, the pneumonia-coccus (micrococcus lanceolatus) is the organism that has been most frequently found present. In two cases recently studied, an Italian observer, Centanni, has found exclusively an organism to which he gives the name bacillus aërogenes meningitidis.

Ecphyaditis is the name proposed by Dr. Robert T. Morris as a substitute for appendicitis. The word is a good one, as the term ecphyas already exists in medicine to describe the appendix vermiformis ceci. Ecphyaditis is also philologically the preferable word; it has the further advantage of distinctiveness.

REVIEWS.

THE TWELVE TISSUE REMEDIES OF SCHÜSSLER. COMPRISING THE THEORY, THERAPEUTIC APPLICATION, MATERIA MEDICA, AND A COMPLETE REPERTORY OF THESE REMEDIES, HOMEOPATHICALLY AND BIO-CHEMICALLY CONSIDERED. By WILLIAM BOERICKE, M.D., late Professor of Materia Medica in the Hahnemann Hospital College of San Francisco, etc.; and WILLIS A. DEWEY, M.D., Professor of Materia Medica in the Hahnemann Hospital College of San Francisco, etc., 3d edition. Rewritten and enlarged. 8vo, pp. 384. Philadelphia: Boericke & Tafel, 1893.

THE remarkable confusion of terms exhibited in the title of this volume is an index of the confusion of thought that pervades it. It is possible for one to honestly believe the dogmas of homeopathy; but not to believe those dogmas and at the same time to think clearly. It seems that one Dr. Schüssler, of Oldenberg, Germany, in 1873, published an article entitled: "A Shortened Homeopathic Therapeutics," in which he undertook to prove that all diseases curable at all were curable by the administration in infinitesimal doses of those mineral substances that form part of the normal animal body. The "Twelve Tissue Remedies" are "ferr. phos., calc. phos., natr. phos., kali phos., kali mur., natr. mur., calc. fluor., silicia, calc. sulph., natr. sulph., kali sulph., magnes. phos." By a table published on page 29, we see that these salts are constituents of various other drugs, such as "china, gelsem., berb. vulg., hamam., cimicif., coloc.," etc., etc. From all of which, by pure Hahnemannian logic, it follows that Schüssler is right in his practice, but wrong in claiming, as he now does, that he has gone beyond homeopathy, and founded a *new* "new school" of Bio-chemiopathy—or something of the sort. There are several practical wheat-kernels in this barnful of chaff, but the result is not worth the labor of winnowing.

Lectures on Mental Diseases, Designed Especially for Medical Students and General Practitioners. By Henry Putnam Stearns, A.M., M.D., Physician Superintendent of the Hartford Retreat, Lecturer on Mental Diseases in Yale University, etc. With illustrations. Pp. 627. Philadelphia: P. Blakiston, Son & Co., 1893.

This volume consists of twenty-nine lectures, which the author delivered before the students of Yale University, and covers the field of mental diseases. The tone of the lectures is conservative, representing, for the most part, the consensus of opinion of American alienists. The classification of insanity is not so extensive as that adopted by Spitzka and other modern writers. The existence of paranoia as a special form of insanity is vigorously combated by the author, while such other special forms as katatonia, confusional and stuporous insanity are not even mentioned. We are glad to note that the author advocates the treatment of some cases of insanity outside of the asylum.

Some eighty pages at the end of the book are devoted to extracts from the laws of the different States and Territories of the United States which relate to the general care of the insane. Unfortunately, these are, in some instances, not given at sufficient length to be of much value.

Taken all in all, the book is of such a character that it would enable a student or general practitioner to obtain a good working knowledge of insanity and would supply him a safe guide for treatment. The specialist will find nothing new in it save the notes of the author's experience at the Hartford Retreat, of which some of the cases recorded constitute a real contribution to the science of psychiatry.

The Anatomy of the Peritoneum. By Franklin Dexter, M.D., Assistant Demonstrator of Anatomy, College of Physicians and Surgeons, New York. 12mo, pp. 86, with 38 illustrations. D. Appleton & Co., 1892.

This is a valuable contribution, intended to render more clear that unsatisfactory and incomprehensible anatomic part, the peritoneum.

The author, taking the description of Prof. Toldt, of Vienna, of the development of the peritoneum, as a basis, has enlarged the work with many plates, and has so planned it that the student is taken along, step by step, in the most elementary manner, with comparative ease, to a perfect understanding of the subject. It is not sought to impress the embryologic details, but their results. The study of the development of the organs not only contributes valuable information as to their normal position, but renders the knowledge of abnormalities more comprehensible. Thus, the hiding from view of a portion of the duodenum by the mesentery of the transverse colon, the absence of peritoneum on the posterior surface of the mesentery and a portion of the colon, the high position of the cecum in children in relation to the liver rather than to the iliac fossa, the simultaneous development of the peritoneum and the intestine (that the intestine has not, after it has been formed, been pushed into the membrane as a finger into a glove), and many other points are satisfactorily explained.

The work is of a highly scientific character and of considerable practical value, and the author is to be highly commended for the production of a work which reflects great credit upon his ability as a practical scientific anatomist.

Physiology. A Manual for Students and Practitioners. By Frederick A. Manning, M.D. (The Students' Quiz Series.) Philadelphia: Lea Brothers & Co.

This little book claims to be but a brief summary of the salient features of human physiology. This is the statement with which the writer begins his preface, and it requires but slight acquaintance with the book to prove that he appreciates the proper sphere of the quiz compend. The terse answers to questions, and the descriptions which he gives, while they contain the pith of the subject, could not be made to take the place of the study of one of the standard text-books; but once the information is acquired from such a source, this manual will be an excellent help to fix it in the mind of the student preparing for his examination, or, perhaps, to refresh the memory in after years.

On looking through the various sections of the book—on the Blood, the Circulation, the Respiration, Digestion, Absorption, Animal Heat, Secretion, Muscle, Nutrition, the Nervous System, the Senses, and Embryology—we confess to be well pleased with it, as a whole. Of course, everything is much condensed, as it is proper that it should be, but the author has succeeded very well in presenting the essence of the subject. In an appendix are given a Table of the Development of the Embryo, a list of the Chemical Tests used commonly in Physiological Analysis, and the Metric System, which are well to have at hand.

Dr. Manning has based his book mainly on the works of Dalton, Foster, and Kirke. He has written in a very readable style, and deserves to be congratulated on his contribution to the Quiz Series.

Transactions of the American Gynecological Society. Vol. xvii, 1892. Philadelphia: William J. Dornan, 1893.

This volume presents in the usual complete form several interesting contributions, among which are to be noticed particularly the extensive paper upon "Tuberculosis of the Female Generative Organs," by J. Whitridge Williams, of Baltimore, Md. This article is very extensive in its scope and presents a complete history of the investigations in this field of Gynecology. The writer naturally devotes most of his space to the consideration of tuberculosis of the tubes, as these are the primary seat of tuberculous infection, of the genitals as well as the organs most extensively affected. The frequently observed fact of the limitation within the internal os of tuberculous endometritis is forcibly noted. Another paper of interest is that of Dr. Edward Reynolds, of Boston, on "The Value of the Forceps in Complicated High Arrest of the Breech, with Report of Two Cases." The description of the adjustment of the blades to the breech is unusually instructive, inasmuch as the

safe application, in which the lower part of the breech is grasped, and that by the tips alone, will enable future operators to appreciate the proper application, whereas otherwise the instrument might be introduced too far, in the mistaken idea that a high application is the desideratum.

In addition to these papers that of the President, Dr. Byrne, of Brooklyn, upon the conservative versus the radical treatment of "Carcinoma of the Uterus," is important.

TABLETS FOR THE MEASUREMENT AND RECORDING OF THE MAGNIFIED IMAGE OF THE FUNDUS OF THE EYE. By DR. FLAVEL B. TIFFANY, of Kansas City, Mo. Published by Osborne & Pitrat, Kansas City, Mo.

THE author of these ingenious tablets has taken advantage of the well-known fact that the enlargement of the upright image in ophthalmoscopy depends upon the distance to which the image is mentally projected. Assuming, therefore, that the magnification of twenty times—about the ordinary amount of enlargement in the upright image—necessitates a chart of such dimensions to be placed thirty centimeters back of the observed eye, the observer is at once given a graduated blank by which the details of any fundus oculi, in almost the exact size of those seen in the ophthalmoscopic picture, can be projected on a sheet by his unused eye.

We have successfully taken advantage of the method in a number of cases, though we find by comparison with others that it does not adapt itself to those observers who are presbyopic and not ambidextrous.

THE DISEASES OF CHILDREN, MEDICAL AND SURGICAL. By HENRY ASHBY, M.D. Lond., F.R.C.P., and G. A. WRIGHT, B.A., M.B. Oxon., F.R.C.S. Eng. Second edition. Edited for American Students by WM. PERRY NORTHRUP, A.M., M.D. 8vo, pp. 773. New York and London: Longmans, Green & Co., 1893.

THE additions and comments of the American editor have not been included in the text, but are collated in the appendix with proper reference. The formulæ have been rewritten to conform with the U. S. P. The work itself has, by its passing to a second edition, been stamped with professional approval; and it is, indeed, an accurate and reliable guide to the diagnosis and treatment of the diseases studied. We note with pleasure the acknowledgment made by the authors to successive generations of house-surgeons whose well-kept notes of cases have been utilized. Few American authors can make similar acknowledgment. The style of the authors is easy, but clear; and while it is concise, no important fact has been sacrificed to condensation. We can cordially commend it to student and practitioner.

CORRESPONDENCE.

FRACTURE OF THE HUMERUS DURING DELIVERY.

To the Editor of THE MEDICAL NEWS,

SIR: I see reported in THE NEWS several cases of fracture of the femur during delivery. Allow me to report a case that occurred to me a good many years ago, and has never been reported.

I was engaged to attend Mrs. ——, a primipara, the wife of a mill-owner, a very stingy fellow. When labor commenced he sent for a "wise woman," who, he was told, knew more about such cases than any doctor, in order that he might save a part of (in those early days) my small fee. About daylight one morning he came for me at a hard gallop, saying that his wife was bleeding to death. I went at once, and found a rather severe case of post-partum hemorrhage, and a roomful of awfully frightened women, the "wise woman" as white as Hamlet's ghost, for her patient was in a dead faint. Happily the patient responded to stimulants, and I succeeded in arresting the hemorrhage.

The nurse then said to me: "Doctor, there is something wrong with the baby's arm." On examination I found a simple fracture of the humerus, between the upper and the middle third. I could not learn the presentation. I reduced the fracture, and put it up in a moulded pasteboard splint. Union took place in a short time, and there was no deformity.

I had the satisfaction of charging and collecting full fees in both cases. *I also introduced the next baby.*

Respectfully, N. AGNEW, M.D.

WINNIPEG, MANITOBA, CANADA.

SOCIETY PROCEEDINGS.

AMERICAN MEDICAL ASSOCIATION.

Forty-fourth Annual Meeting, held at Milwaukee, Wis., June 6, 7, 8, and 9, 1893.

(Continued from page 677)

SECTION OF DISEASES OF CHILDREN.

FIRST DAY—JUNE 6TH.

DR. CHARLES G. JENNINGS, of Detroit, delivered the President's Address, which was entitled "Some Recent Advances in Pediatrics." After thanking the Section for the honor conferred upon him, the Chairman called attention to the recent changes in the organization of the Association that give to the Section work, and to the scientific work their proper position as leading factors in the organization. He pointed out that the Section has heretofore lacked cohesion and coöperation. The membership of an undifferentiated section is diffuse and unstable, and it cannot exert the influence in the Association and the profession that it should. Pediatrics covers almost the whole field of medical and surgical specialties. Including in its membership general practitioners and specialists, the Section is most favorably organized to carry out its function of collecting and disseminating the most advanced teachings in this department of medicine. The Chairman urged the necessity of more firmly establishing the Section's autonomy. He advised the cultivation of a more intimate social relation among the members, full and prompt reports of discussions and proceedings, and the arrangement by the officers of the section of short, practical papers, in series, on live subjects. The Chairman then briefly reviewed some of the recent advances in pediatrics. He called attention to the more extensive use of the bath in febrile diseases, and noted that the bath frequently, and properly, re-

placed active antipyretic drugs. Considerable attention was devoted to a review of the recent investigations into the etiology of diphtheria and the relation that the disease bears to the various pseudo-membranous throat-affections.

The difficulty was emphasized of accurately diagnosticating diphtheria from similar conditions by clinical means alone, and the necessity of bacteriologic examinations was urged. In cases of doubt, and when these examinations cannot be made, the doctrine of isolation should be observed to its farthest limits.

DR. W. A. DIXON, of Ripley, Ohio, read a paper entitled "Observations on Isolated Cases of Diphtheria." He stated diphtheria is a common and destructive disease, from which rich and poor alike suffer severely. Sanitary conditions seem to have little to do with its prevalence. It has always displayed a marked tendency to prevail in sparsely populated districts rather than in centers of population. In the United States it occurs as often on the hilltop as in the crowded city tenement houses. Pathologic reports are replete with statistics showing the communicability of diphtheria from the lower animals to man.

Cases of isolated diphtheria were cited to show that children have been infected from birds, fowls, pigeons, and cats. In 1865 an epidemic of malignant and fatal diphtheria prevailed in Southern Ohio following a period of great fatality among the hogs and chickens of that region.

In another case, a child, whose home was perfectly isolated, and who had a pet cat which it nursed continually, and which had been ill some days and had a discharge from the nostrils, was seized with diphtheria.

DR. G. BENSON DUNMIRE, of Philadelphia, read a paper entitled "Some Observations in Treating Cases of Diphtheria."

DR. F. E. WAXHAM, of Chicago, presented the following table of statistics of intubation:

Age.	Cases.	Recoveries.	Percentage.
Under 1 year	13	4	30.76
1 "	62	13	20.96
2 years	81	25	30.86
3 "	85	32	37.64
4 "	90	35	38.88
5 "	43	19	44.18
6 "	26	7	26.92
7 "	29	10	33.33
8 "	13	8	61.53
9 "	7	3	42.85
10 "	7	3	42.85
11 "	1	1	100.00
12 "	3	0	00 00
13 "	1	0	00.00
14 "	1	0	00.00
20 "	1	0	00.00
36 "	1	0	00.00
43 "	1	1	100.00
60 "	1	0	00.00
	466	161	34.54

DR. WAXHAM also read a paper entitled "The Therapeutics of Diphtheria." He expressed the hope that the inoculation-treatment of diphtheria will soon replace all other methods of treatment. There are still great difficulties to overcome, however, before the method can be applied to man. The treatment of diphtheria may be considered under the following four heads: (1) Nourishment, (2) Stimulation, (3) Internal Medication, (4) Local Antisepsis. The importance of feeding is often overlooked, especially as to the amount that is taken. On account of loss of appetite, the patient may refuse all kinds of food. In such a case, peptonized food by enema or by the stomach-tube may be resorted to. Mild cases do not demand the use of alcoholic stimulants, but severe cases do demand them. When required, alcohol should be given freely at least one or two teaspoonfuls every hour, or half-hour, according to the urgency of the case. If necessary, strychnine, musk, or ammonia should be given. The tincture of ferric chlorid is a valuable agent. It should be given in frequent and full doses—ten, fifteen, or twenty drops to young children and should be repeated every hour or half-hour. Mercuric chlorid or potassium chlorate may be given, but in severe cases of diphtheria either is too irritating to the kidneys. The local antiseptic treatment is of great importance. Carbolic acid, mercuric chlorid, tannic acid, chlorin water, or hydrogen dioxid may be used. The results, however, will not depend so much upon the remedy employed as upon the method of employment. In the strength of 1 to 4000 mercuric chlorid is not irritating. Hydrogen dioxid, 1 to 4, is not irritating. The spray is to be preferred to the douche. One of the most efficient means of flushing the nasal cavities is by the use of the soft catheter. The indications in the treatment of diphtheria are to destroy the bacilli and to support the system by abundant nourishment, free stimulation, and full and frequent doses of iron.

DR. J. A. LARRABEE, of Louisville, stated that it is always well to give the patient the benefit of any doubt and treat the case from the first as though it were one of diphtheria. There are some points by which the diagnosis can often be made rather early. The constitutional disturbances of tonsillitis are sometimes profound, but they are not associated with the blood-changes observed in diphtheria. Albuminuria is present in almost all cases of diphtheria in the second stage. Glandular enlargements are also present in diphtheria. The appearance of the pseudo-membrane cannot be relied upon. In the preventive treatment tincture of ferric chlorid is to be preferred, which should also be given during the whole course of the disease. It is usually not given in large enough doses. It increases the number of red blood-corpuscles, and thus renders it possible for a larger amount of oxygen to be taken into the body. It also stimulates the appetite and acts as a diuretic. Local treatment should precede or at least accompany the constitutional treatment. Mercuric chlorid is objectionable. If used as a gargle or spray death may result. Hydrogen dioxid, used carefully, does well. Too strong solutions may cause sloughing. As it is almost impossible to spray or irrigate the child's throat the insufflation of boric acid and pepsin or papain is to be preferred. Argentic nitrate is also entitled to consideration. As one attack of diphtheria does not confer immunity to subsequent attack, the value of treatment by inoculation is doubtful.

DR. DOUGLASS, of Detroit, stated that if the tonsils are much inflamed and swollen and encroach upon the air-passages, it is well to incise them. He has not observed this operation to be followed by septic poisoning.

SECOND DAY—JUNE 7TH.

DR. W. S. CHRISTOPHER, of Chicago, read a paper on "The Pathogenesis of Bronchitis." It was shown that bronchitis arises from a large variety of causes. This multiplicity of cause indicates that the disease is probably always secondary and never primary. The principal causes are the poisons of acute infectious diseases, intestinal infection, malnutrition, and bronchoadenitis.

DR. C. L. DODGE, of Kingston, N. Y., read a paper on "The Pathology and Symptomatology of Acute Bronchitis and Broncho-pneumonia." The pathology of acute bronchitis was stated to be "an inflammation affecting a mucous structure, leading to a secretion of mucus and the production of muco-pus in greater or less abundance." The symptoms differ much in degree and as the disease is mild or severe. In addition to the usual premonitory symptoms of coryza, etc., there is a harsh paroxysmal cough. The respiration is accelerated, and in mild cases there is slight fever. In severe cases the fever is considerable and the pulse frequent. The temperature ranges from 101° to 102° F. In severe cases it may reach 103° F. The skin is dry and hot and the cheeks flushed. The cough in many cases is harsh, dry, and persistent. There is also more or less laryngitis, together with pharyngitis of mild grade.

Catarrhal pneumonia is not, like croupous pneumonia, a distinct and independent disease clinically, but in the great majority of cases it is a secondary phenomenon in the course of acute and chronic diseases of various kinds. It almost always follows bronchitis. The same process that causes catarrh of the bronchial mucous membrane, in its further course, invades the bronchioles and alveoli and leads to catarrhal pneumonia.

Broncho-pneumonia is usually preceded by acute bronchitis. The extension of the disease to the lung-tissue proper manifests itself by dyspnea, a change in the character of the cough, and the purulent character of the sputum. When extensive collapse takes place the dyspnea increases, the temperature falls, the cough ceases, and the child rapidly sinks into a comatose condition. The pulse is extremely rapid and runs from 150 to 200. The respiration is also increased, and in severe cases reaches 80 per minute. The temperature will average 104° or 105° F. in acute cases. There is no regular ratio between pulse, temperature, and respiration. Anorexia and thirst are prominent symptoms. On auscultation during the early stages râles of all sorts and sizes may be heard, but it is at a later period that there are persistent subcrepitant râles in one or more spots.

DR. J. M. G. CARTER, of Waukegan, Ill., read a paper on "Some Phases of Broncho-pneumonia in Children." Attention was directed to a class of cases that do not receive the careful observation that they merit. Common colds in children frequently develop into severe attacks of broncho-pneumonia. Many cases recover spontaneously, so that the number of cases that come under the observation of physicians is diminished, and the rate of mortality ascribed to broncho-pneumonia appears high. A recurrence of broncho-pneumonia from colds in adolescence and middle life may develop fibroid pneumonitis. In old people and in children under five years of age, broncho-pneumonia causes the greatest mortality. In simple cases, the chest should be enveloped in cotton batting, the patient kept quiet in bed, and mild anodyne expectorants administered.

DR. F. S. CHURCHILL, of Chicago, read a paper on "The Pathology and Symptomatology of Croupous Pneumonia." Croupous pneumonia in the child, as in the adult, was defined as an acute, infectious, self-limited disease, having its chief pathologic manifestations in the lungs. The pneumonic lung of the child is not as greatly distended nor as solid as that of the adult. It is denser and darker-colored than normal. The surface is rather smooth, and the inflammatory exudation less marked than in the adult. It is not uncommon to find abscesses near the surface following the third stage.

The microscopic appearances are much the same as in the adult. The exudate is usually fibrinous, and contains numerous red and white blood-corpuscles. When it begins to liquefy it contains diplococci, which closely resemble the pneumonia-microbes. The morbid process has a strong tendency to affect the lower lobe; more frequently on the right than on the left side. The onset is usually sudden, with stabbing pain in the side, suppressed cough and rusty sputum; but in children this complex of symptoms is not always present, and the diagnosis is often difficult. The child usually complains of pain in the epigastrium, and headache, accompanied by rise of temperature. The child is usually found breathing rapidly with an "expiratory grunt," its face flushed, the alæ nasi dilated, and the expression painful. The affected side may be noticed to lag. Vocal fremitus may be increased. The respiratory murmur may be bronchial. Râles are rarely heard in children less than three years old. On percussion, a sense of resistance is appreciated over the affected area. Cerebral symptoms vary in intensity, from restlessness to severe convulsions. A certain degree of cyanosis may be present. The temperature varies from 102° to 106°. The pulse and respiration are frequent. The proportion of cases ending by crisis is greater than in adults.

DR. I. N. LOVE, of St. Louis, read a paper entitled "The Therapeutics of Bronchitis." He stated that some observers maintain that bronchitis is due to a special germ, whose port of entry is the air-passages, but the majority admit, however, that bronchitis is, as a rule, simply a result of "taking cold." The predisposing conditions are constipation, improper diet, disturbed digestion, perverted secretions, and exposure to cold. In the therapeutics of bronchitis, the general torpor of the glandular apparatus must not be ignored. The bowels should be thoroughly moved by means of calomel or a saline, followed, if necessary, by castor oil. These remedies mentioned, together with turpentine, serve to stimulate the secretory activity of the mucous glands of the air-passages, and favor expectoration. Local applications may be made to the chest. If the temperature is high, some one of the antipyretics should be given in a stimulating menstruum to reduce the temperature to proper limits. Too high a temperature is dangerous, no matter what the affection may be. It is to be borne in mind that bronchitis in children may terminate in catarrhal pneumonia. Stimulation at the proper time is important, and it is often of advantage to give one or two teaspoonfuls of equal parts of whiskey, glycerin,

honey, and some preparation of malt. The secretions should be stimulated and rest secured. Dover's powder may be used to advantage. Malaria should never be overlooked, for it is remarkable how often it is a potent factor in a case of bronchitis in a child. After the acute stage has passed, turpentine, or terpin hydrate can be given, together with mild tonics and a nutritious diet. Special emphasis is to be laid upon elimination, tranquillization, stimulation, nutrition, and oxygenation.

DR. F. S. PARSONS, of Northampton, Mass., read a paper on "The Therapeutics of Broncho-pneumonia." He stated that a comfortable, well-ventilated room is essential to successful treatment. Exposure is to be prevented, if possible. The patient should be clad in soft flannel and kept in bed. It is well to direct a chest-protector to be worn. This is preferable to poultices, ointments, and other applications. If the case is seen early, medication is to be directed to the cough and to the promotion of resolution, but if seen late and the child is weak, stimulation must be resorted to, for which brandy is to be preferred. Digitalis in drop-doses is valuable. If the temperature is high acetanilid or aconite may be used; the latter being preferable in very young children. It may be necessary to administer an emetic to free the stomach and bronchial tubes. Under such conditions small doses of calomel may be administered to empty the stomach and intestines. The position of the child's body should be changed frequently, to prevent hypostatic congestion. If there is a tightness of the chest, the boiling of water in the room will frequently do good. To stimulate the action of the mucous glands and to increase the watery elements of the secretion the spray is indicated, and the best drug is ipecac in some form. Opium may be combined with ipecac to relieve irritability. As a diuretic, potassium citrate is to be recommended. Ammonium and other stimulating expectorants are useful in the later stages. During convalescence tonics of iron and a good nutritious diet are always useful.

DR. J. A. LARABEE, of Louisville, read a paper on "The Therapeutics of Croupous Pneumonia." He recommended a formula containing spirit of nitrous ether, f℥jss; potassium acetate, ℥jss; solution of ammonium acetate, water, and camphor, each, f℥iij. The solution should be slightly acid in reaction. The dose for an adult is one tablespoonful; for a child a teaspoonful, every two hours. To this may be added aconite or veratrum viride, and during convalescence tincture of ferric chlorid.

Death usually occurs through the heart. *Pari passu*, with the consolidation of the lung, and in direct proportion to its extent, the transfer of blood from the right to the left heart is mechanically obstructed. The condition would be rendered still more dangerous by the use of such a stimulant as digitalis. The ligation of the lower extremities, sufficiently to prevent return of venous blood, relieves the heart. The application of dry cups and flaxseed poultices to the chest is of service. The best results are to be obtained, without jeopardizing the life of the patient, and without interfering with convalescence: (1) By agents that determine the blood to the skin; (2) by belladonna; (3) by nitro-glycerin and the nitrites; (4) by applications to the chest.

The mixtures usually prescribed for the cough of pneumonia contain ipecac and squills to loosen, senega and ammonium to stimulate, wild cherry and other tannates to check secretion; alkalies to lessen the viscidity of the mucus; and opium to dull sensibility. Water given in abundance and at short intervals is the best and only expectorant required. Purgatives add to the general depression. If the bowels need attention, they should be moved by simple enemata.

Hyperpyrexia usually yields to the warm bath or pack. The pack is preferable to the bath.

DR. JAMES B. HERRICK, of Chicago, stated that in cases of central pneumonia the physical signs are frequently so imperfectly marked that the diagnosis is very uncertain. The pain is so frequently referred to the epigastrium that attention is attracted to this region, but the rapidity of the respiration should direct attention to the chest. The broncho-pneumonia that occurs in the new-born is probably due to the inhalation of liquor amnii.

DR. E. E. GRAHAM, of Philadelphia, stated that if, in the treatment of pyrexia, he were limited to a single agency, he would not hesitate to accept cold as the best. If cold is applied at all, it should be done fearlessly. Depressing effects do not follow the proper employment of cold. Good results may also be obtained from cold water injections; from a pint to a pint and a half can be injected at a time. Aconite should be used with the greatest caution.

DR. CHARLES G. JENNINGS, of Detroit, stated that the bath is a stimulant to both respiration and circulation, as well as a good antipyretic. Drugs may be used in the beginning of the disease; but during the latter part of its course the bath, beginning at 90° and gradually reduced to 80° or 75°, acts as a stimulant to all of the functions and will reduce the temperature to a safe point.

DR. J. M. G. CARTER, of Waukegan, Ill., stated that, according to statistics, there are 561 deaths per million due to bronchial affections in the city, to 165 per million in the country. Among the Indians there are only 10 deaths per thousand attributable to bronchitis, while among the whites there are about 28 per thousand. These figures go to show that exposure does not play a very important rolê in its causation.

THIRD DAY—JUNE 8TH.

DR. J. A. WORK, of Elkhart, Ind., read a paper on "The Importance of Early Effective Elimination in the Zymotic Diseases of Children." All children equally exposed to a certain contagion do not alike contract disease. Because some are in a healthy condition, the system is in a normal physiologic condition, the poison finds no nidus of effete matter or no lodgment to encourage it to remain.

A system thoroughly cleansed of all effete and residual matter is rendered less susceptible to, if not entirely exempt from, the poison of scarlatina. It is, therefore, a rational procedure, in treating little patients, to eliminate as early as possible through all channels and maintain the normal action of the eliminative organs throughout the entire course of the disease.

Early elimination is important in all zymotic diseases, and, if practised early, will in many cases prove abortive.

DR. MARION THRASHER, of San Francisco, read a paper on "Dentition and Some of its Diseases." It was

pointed out that normal dentition is comparatively harmless, but in this age of civilized refinement abnormal dentition is the rule, and the danger is constantly increasing. A few decades ago, when it was more general than now the practice of mothers to nurse their children, the fatality was not nearly so great.

Dentition in artifically-fed children develops incidentally many diseases. The commonest are irritative fever, indigestion, convulsions, stomatitis, capillary bronchitis, and pneumonia.

Purulent conjunctivitis may arise when the upper canine teeth are being cut, the inflammation being transmitted through the antrum of Highmore. Cough is often present when the upper teeth are being cut. Eczema impetiginosum may also occur at this period. During the evolution of the teeth the submaxillary glands are often swollen and the cervical glands may enlarge and suppurate, especially in scrofulous or rachitic children.

The hygienic and dietetic conditions should be made most propitious. The diarrhea that is often present is usually best met with minute doses of hydrargyrum cum creta, sodium bicarbonate, and tannin, for a day or two, followed by oil. Excessive temperature should be controlled. Cutaneous affections require no special attention during this period. Diseases of the respiratory organs should receive attention. Restlessness should be overcome by hot baths, aconite and bromids.

Delayed dentition in puny children may be remedied by vigorous constitutional treatment, including pure air, proper food, bathing, ferric citrate, cod liver oil, quinine.

DR. A. FOSTER, of Chicago, laid stress upon the importance of discriminating between the effects of teething and those of improper feeding. He also pointed out that there may be a reflex relation between the cutting of teeth and the stomach, as well as there is between the uterus and the stomach, and that all of the trouble arising during dentition may not be due to the stomach alone.

DR. J. WELLINGTON BYERS, of Charlotte, N. C., read a paper entitled "Phenomena and Causes of Gastro-intestinal Fever (not typhoid.") He said that there is a large class of gastro-intestinal disorders characterized by phenomena closely resembling those of typhoid fever, which deserve special attention and study from the fact that they are often confounded with the latter condition, and a line of treatment is instituted that serves only to aggravate and protract them. These disorders have been variously designated as gastric fever, gastro-intestinal fever, pseudo-typhoid, abortive typhoid fever, simple fever, and continued fever, though they are all phases or forms of the same disease, namely, disordered digestive processes leading to putrefactive changes in the alimentary canal, and the absoption of toxins into the circulation. They set in with a diversity of symptoms, in accordance with the individual attacked and the specific etiologic agents. They are most frequently traceable to errors of diet; but fatigue, anxiety, shock, undue physical and mental exertion, exposure to a foul, damp atmosphere, and the heat of the sun may act as causes. As a rule, young children and those with feeble digestive powers are most susceptible. The attack sets in with a feeling of indisposition, followed by chilliness, fever, headache, thirst, anorexia, and pain in the back, abdomen, and limbs. The tongue is coated with a white fur, and the pulse is accelerated. There is commonly constipation, though in young children diarrhea is often present. The pyrexia reaches its maximum early on the first or second day. The duration of the attack is usually less than a week if proper treatment be instituted; otherwise, the disease may continue for an indefinite time, and thus simulate typhoid fever. As contrasted with the latter, the rise of temperature is sudden, the highest, 104°, being reached in the first few days of the invasion. The bowels are most frequently constipated; there is absence of the characteristic typhoid tongue; and there is no circumscribed iliac tenderness or tympanites, but a general soreness over the entire abdominal region. The prostration of the nervous system is not so marked as in typhoid, though patients often complain of great muscular weakness even after a few days' illness. In an etiologic connection recent developments in physiologic chemistry and bacteriology have shown that whenever from any cause the normal digestive functions are perverted, putrefactive processes occur in the alimentary canal. Disordered innervation, originating under debilitating circumstances of environment, acts as a predisposing cause by leading to perverted glandular and cellular function, thereby facilitating the production and absorption of alkaloidal poisons from the digestive tract. The old notion that a torpid liver is conducive to putrefactive changes in the intestines is the correct one. The hepatic condition is frequently the first recognizable stage in the causation of the disorders enumerated, and the first step in all treatment for their alleviation should be directed toward the restoration and maintenance of the hepatic functions. The first element of success is the differentiation from typhoid conditions. This being done, food should be withheld until the putrefactive substances have all been removed from the canal, and then a line of medication should be instituted that will tend to restore normal cell-function by promoting the trophic forces and the anabolic processes.

DR. J. SCHENCK, of Mt. Carmel, Ill., read a paper entitled "Cholera Infantum; Its Treatment in Malarial Localities." He defined cholera infantum as a disease of early childhood, in which there is exalted excitability of the nerve-centers and of their meninges, producing high fever and causing sudden attacks of forced vomiting and violent purging, which, if not controlled, result in exhaustion and death in a short space of time. The primary cause is continuous, high summer heat, both night and day, combined with malarial or other miasmatic poisoning. The secondary causes are indigestion and fermentation of the food-contents of the alimentary canal, including decomposition of the normal secretions and excretions of the digestive tract.

The preventive treatment is mental and physical quiet. The body should be kept as cool as possible during the time of greatest heat; pure and easily assimilable foods should be given; all unhygienic conditions should be removed; digestion should be aided by pepsin; malarial influences counteracted by quinine, and nervous excitement by physostigma venenosum.

For curative purposes, the little patient should be placed on a rubber bag filled with cold water; exalted nervous action should be inhibited with sodium bromid and physostigma, repeated until their physiologic effects

are produced, or, in older children, hypodermatic injections of morphin may be given to accomplish the same object; cold egg-water should be given to allay thirst and fever; small doses of morphine and carbolic acid to control vomiting, and large mustard plasters should be applied to the extremities to relieve central congestion; the secretions and excretions should be stimulated by means of small doses of calomel and sodium bicarbonate. After reaction has taken place, the case is to be treated as one of severe entero-colitis—a condition that is almost certain to follow.

DR. M. G. SLOAN, of Dexter, Ia., read a paper entitled "Meningocele, with Case." The occurrence of pure meningocele is doubted by many, and is certainly very rare. The diagnosis is difficult. The condition is often diagnosticated as hydro-cephalocele. With modern antiseptic methods the operation for removal should be a comparatively safe one. In the case reported and operated upon the result was a perfect cure. Not a vestige of anything resembling brain-tissue was found.

DR. THOS. H. MANLEY, New York City, read a paper entitled "The Etiology, Morbid Anatomy, Diagnosis, and Treatment of Infantile Hernia of the Inguinal Type in the Male." It was maintained that the predominating elements in infantile hernia are anatomic, but heredity also plays an important rôle. The mal-descent of the testis is more often responsible than all the other known causes combined. The causes being so variable, the treatment also must be variable. The diagnosis of the inguinal type of infantile hernia is not difficult in the majority of cases, but in many forms of cystic disease of the cord an accurate diagnosis is not always possible.

The treatment will include attention to diet, clothing, rest, support or pressure, removal of such causes as occasion straining, and radical operation.

DR. WILLIAM E. WIRT, of Cleveland, Ohio, read a paper entitled "Hernia in Children." He spoke of the frequency and varieties of hernia in children. The condition is much more common in males than in females. Umbilical and femoral hernia are much more frequent in females than in males, but femoral hernia is rare in children. As etiologic factors, climate and the condition of the patient were mentioned. The treatment was considered under three heads, viz.: 1. General treatment; 2. Mechanical support; 3. Operative measures.

A paper entitled "Acute Endocarditis of Children; Etiology, Symptomatology, and Treatment," by C. N. HIGHLEY, of Conshohocken, Pa., and one entitled "Primary Syphilis and Gonorrhea in Children," by B. M. RICKETTS, Cincinnati, Ohio, were read by title.

(To be continued.)

AMERICAN ACADEMY OF MEDICINE.

Eighteenth Annual Meeting, held at Milwaukee, Wis., June 3 and 5, 1893.

(Continued from page 680.)

SECOND DAY—JUNE 5TH.

DR. BENJAMIN LEE, of Philadelphia, presented a paper entitled "The Duty of the State to Medicine." He urged that the State should recognize that it incurs obligations at the same time that it imposes obligations upon the medical profession. Among these are the duty of according to physicians occupying official positions equal recognition, rights, privileges, ranks, and emoluments with others, notably the legal and military professions; of securing to the medical profession such a standard of education and attainments as shall enable it to command the respect due it; of paying for services demanded; of protecting its members against malicious prosecutions; of officially recognizing achievements in medicine and surgery, and, finally, of recognizing the importance of State medicine. "The health of the people is the first duty of the statesman."

DR. GASTON said that the public should be compelled to recognize its obligations to the profession by statutory enactments, if necessary. The public seems more ready to recognize the quack than the educated physician. Medical officers should be empowered to perform their duties without secondary orders from superior officers. The necessity of preliminary training was emphasized. Dr. Gaston deplored the tendency in the South to neglect such training. Without preliminary education the student cannot understand medical lectures, and part of this training should be under preceptors and in active office-work. The necessity of the business aspect of the physician's life was urged as an element of success. The State should be required to pay for all medical services demanded. Pay for expert testimony by the courts is at present a farce. The profession should have a cabinet officer. If the profession would work together, this could be brought about. The organization of State Medical Examining Boards is a wise choice of evils. School diplomas cannot be relied upon. In malpractice suits the innocent should not be allowed to suffer. Rashness and ignorance should be punished.

DR. MARCY called attention to the fact that by the proposed extension the work of the Academy would be enlarged. The physician is not only a doctor; he is also a man and a citizen. The coroner system, for example, is a blot and a disgrace to our civilization.

DR. CONNOR said that if every physician taught his patients and friends their duties, there would be no trouble. The teachers do not stand together. Most malpractice suits originate with some member of the profession. The profession should be the teacher.

DR. HOLMES alluded to the injustice of hospitals not paying physicians, as every other attendant—nurse, superintendent, etc.—is paid. The remuneration of the physician may consist in permission to utilize clinical material for clinical instruction. The reimbursement would come back to the public. It is an axiom, or should be, that no gratuitous service can be *demanded* of a physician. If he does give it, it is given as a delegate from the profession.

DR. C. C. BOMBAUGH, of Baltimore, read an excellent paper entitled "Literary Recreations of the Physician." Among other things, he said that there must be some form of recreation to compensate for the trials and anxieties of the physician, and among the methods of relaxation one is in weaving from his own unfettered fancies story or song, poem or play, essay or critique, brochure or quarto. *The Index-Catalogue of the Surgeon-General's Office* shows what medical men have done for medical literature. While they have not been so prolific in general literature, they have contributed much that commands widespread admiration. A great deal of this, it

is true, has been written by those who have withdrawn from active practice, hence Copernicus, Galileo, Servetus, and others of their class are not thought of at the first as physicians.

Others have found themselves not able to bear the wear and tear of active practice. Among these may be found Schiller, Thomas Huxley, William Farr, Erasmus Darwin, and Charles Lever. Others, like Abraham Cowley, never attempted to practise, but still others mingled their literary pursuits with an active practice. Mark Akenside, Dr. Arbuthnot in the reign of Queen Anne, Sir Richard Mead, who was physician in ordinary to George II, were mentioned among others.

America has quite a respectable list of such men, from Benjamin Rush, David Ramsay, Samuel Hopkins, and others of the Revolutionary period, to authors of the present day. Literary occupation is not work, however, in the ordinary sense of work; it is diversion, the safety-valve for weariness. Thus the Autocrat of the Breakfast Table has shown how the Anatomist in the Lecture-room could trace the tortuous windings of the trigeminus, and then go home and pen such immortal verse as the "Living Temple" or "The Chambered Nautilus." Fair characterization has not yet been accorded the physician by the modern novelist. The satire of the earlier writers has castigated the pretenders of the past, but the qualities and qualifications of the end-of-the-century physician, whose education ends only with his life, who meets conscientiously all moral and legal responsibilities, or who is ever ready for self-renunciation and self-sacrifice, have not been fairly weighed and measured by the end-of-the-century literary class.

Rudolph Virchow, who has not only reached the top of the ladder as a biologist and a pathologist, but has also climbed high as a statesman and a politico-economist, recently remarked that, "after wearying, useless efforts in political, social, or religious matters, scientific work is a recreation."

DR. J. CHESTON MORRIS, of Philadelphia, presented a communication entitled "The Care of Abandoned Infants." He said that in Roman times the infant born in the house was brought to the head of the house, to be acknowledged and taken care of or to be refused and slain.

In medieval times, children abandoned by their parents were exposed in front of the church, for adoption. Gradually the foundling asylum took the place of this cruder method, until the horrible results in the way of infant-mortality and of incentive to criminal life caused the system to be abolished in France and Belgium.

In the United States the almshouse afforded a refuge not much better than the foundling asylum abroad, and few infants survived the troubles and diseases of infancy.

In consequence of the publicity given to the facts some ten or twelve years ago, an institution called "Sheltering Arms" was established in Philadelphia, on the principle of trying to save the mother through the love for her offspring. The results have been most satisfactory and encouraging. No infant is refused, but the effort is always made to find and keep together mother and child. After several months of residence in the house, where the mothers do the most of the work, a place is found in the country for her, and the effort is made to keep in touch with her by correspondence.

No woman is destitute wholly of the true maternal instinct. It may be clouded or overshadowed, and if she is permitted to make away with her child, or even to abandon it, her moral nature receives a wound difficult to heal and always leaving a horrible scar.

DR. C. MCINTIRE, of Easton, Pa., read a paper entitled "The Importance of the Study of Medical Sociology." He quoted from the *Century* dictionary the definition of "sociology" as: "The science of social phenomena; the science which investigates the laws regulating human society; the science which treats of the general structure of society, the laws of its development, the progress of civilization, and all that relates to society."

Is there a special department of medical sociology? Are physicians peculiar, because physicians? If this view is taken, reference may be made to the past and present discussions on the codes of ethics. But there is the other view—the relation of the physician, as a physician, to the world about him. Medical sociology has, then, a twofold aspect—the social science of physicians regarded as a class, and the peculiar relations that the practice of medicine may bear to the social structure as a whole.

Does the physician differ from his fellow-men engaged in other pursuits? There is a language peculiar to the physician; there are customs peculiar to him. Other characteristics are a tendency to undue specialism and an incongruous admixture of conservatism and credulity. The relation of the physician to society at large is shown by his efforts to relieve suffering among the "under half"; in the results of his labor in sanitary science as a factor in the solution of municipal questions, the construction of dwellings; in the care of armies and of fleets; in the true presentation of the desirability of physical education. The classification suggested for sociology was that of Mr. Melville Dewey, which has been adopted in many of our large libraries. It includes statistics, political science, political economy, law, administration, associations and institutions, education, commerce and communication, and customs and costumes. Whenever medical knowledge is necessary to the elucidation of questions coming under either of these divisions, there are to be found problems of medical sociology.

The Academy has been devoting its energies to one class of educational problems, but this has so far advanced toward solution that it does not now require the entire effort of the Academy, and it will be well for it to enter this territory, at present unoccupied by any medical society.

The importance of the study of medical sociology may be seen from a consideration of the importance of some of the questions that ought to be discussed. The "political powerlessness of the medical profession" is acknowledged by all. As physicians usually endeavor to have legislation for the benefit of the community, and not for personal ends, this fact is to be deplored; and if the profession could wield the political power that it ought, much could be done for the common weal. The problem of the prevention of pauperism is one of the most pressing of the age and involves medical ques-

tions. Not the least among them is use and abuse of the free dispensary.

DR. CONNOR thought it wise to extend the same study to medical men as to bacteria, etc. Medical men have a great burden of secrets; they are, however, the silent men of the community. The medical profession thus differs greatly from other professions and is thus at a disadvantage. The relations of medical men to each other are peculiar and beyond the comprehension of the outside world. The medical man, indeed, is one of the pilots of life. In the lines of education these problems of medical sociology have a place. The study of the Constitution and the ideal arrangement would unite the profession into a band of brothers, working for the world, and based, so far as association goes, on scientific work.

In discussing the paper of Dr. Gould, DR. BAYARD HOLMES made a plea for a closer study of our requirements for endowment. How much will it require to run, in a first-class educational manner, a medical school with a four-year course and four hundred students, or forty students each with a good preliminary education? In one of the large cities it will cost fifteen thousand dollars a year, not including a dollar of salary to teachers. If in computing the salaries for instructors the standard of four recitation-hours daily in each of four years be taken, there would be sixteen recitation-hours that must be provided for. As about two-thirds of this work is either laboratory or clinical work, at least ten additional hours must be allowed, *i. e.*, twenty-six hours of the teachers' time will be consumed. An average day's work for a college teacher is two hours. It would then require at least thirteen teachers devoting full time to teaching. The salary of these men at $3000 a year would be $39,000, which, if added to the running expenses, makes a total expense of $54,000 a year for the ideal medical school conducted for education only. It may be said that clinical teachers should not be paid, but it is desirable that every teacher should be paid moderately.

There is now a great endowment going to waste or being perverted. The public pays for the care of the poor in public hospitals, and yet the cases are not used for educational purposes. Every free hospital should be a training-school for medical men and medical students. The public deserves this, and the patients would receive better care.

The noble endowment that has been given hospitals in the name of charity is not always well directed. Thus, the extravagantly constructed Johns Hopkins Hospital costs more to keep in repair than would suffice to run a medical school. These great hospitals pauperize the people, pervert the legitimate rewards of the medical profession, render it so niggardly paid that the educated and refined cannot find in it a life-work.

The universities should be called on to do as well by medicine as they do by other schools. This is not done now.

The following officers were elected for the coming year: President, Dr. George M. Gould, of Philadelphia; First Vice-President, Dr. C. C. Bombaugh, of Baltimore; Second Vice-President, Dr. J. McF. Gaston, of Atlanta, Ga.; Third Vice-President, Dr. S. W. French, of Milwaukee, Wis.; Fourth Vice-President, Dr. C. W. Foster, of Woodyard, Me.; Secretary and Treasurer, Dr. Charles McIntire, of Easton, Pa.

NEWS ITEMS.

Fatal Quackery.—A terrible story comes from a Hungarian city. A family of eight persons were suffering from scabies, and a wise woman was consulted, who sold them a strong mercurial ointment, with which the whole body was to be freely rubbed. The ointment, made of putrid fat, set up septicemia in a few days, and when a medical man was called in two children were already dead and a third lay dying. It was further stated that the remaining members of the family would also probably succumb.—*Medical Press and Circular.*

Pasteur Institute in the Punjab.—It is proposed to establish a Pasteur Institute in the Punjab Himalayas for the treatment of hydrophobia and for scientific research. To make available the benefits of the Institute to the whole of India, patients are, when necessary, to be conveyed free of charge from any part of India to the Institute.

Paul Guttmann, Sanitary Councillor and Director of the Hospital Moabit, died at Berlin on May 24th, of pneumonia complicating influenza, at the age of fifty-nine years.

James Moleschott, the distinguished physiologist, comparative anatomist, and anthropologist, died on May 20th, at Rome, of erysipelas, aged seventy years.

Mr. Marcus Beck, Professor of Surgery at University College, London, died May 21st, of diabetes.

BOOKS AND PAMPHLETS RECEIVED.

How to Operate for Hemorrhoids. By Charles B. Kelsey, M.D. Reprinted from the Therapeutic Gazette, 1893.

Free Incision of Abscess of Ostitis of Hip, and Closure without Drainage. By H. Augustus Wilson, M.D. Reprinted from the Transactions of the Philadelphia County Medical Society, 1893.

Practical Details in the Preparation of Plaster-of-Paris Bandages. By H. Augustus Wilson, M.D. Reprinted from the Philadelphia Polyclinic, 1893.

A Clinical Lecture on the Prevention of Idiopathic Rotary Lateral Curvature of the Spine. By H. Augustus Wilson, M.D. Reprinted from Annals of Gynecology and Pediatry, 1893.

The Influenza Bacillus. By J. A. Comstock, M.D. Reprinted from the Southern California Practitioner, 1893.

The Creation of God. By Jacob Hartmann, M.D. New York: The Truth Seeker Company, 1893.

Metatarsalgia (Morton's Painful Affection of the Foot), with an Account of Six Cases Cured by Operation. By Thomas S. K. Morton, M.D. Reprinted from the Transactions of the Philadelphia Academy of Surgery, 1893.

The Internal Treatment of Lupus Erythematosus with Phosphorus. By L. Duncan Bulkley, A.M., M.D. Reprinted from the American Journal of the Medical Sciences, 1893.

Clinical Study and Analysis of 1000 Cases of Psoriasis. By L. Duncan Bulkley, A.M., M.D. Reprinted from the Maryland Medical Journal, 1891.

Third Biennial Report on Vital Statistics of the State of Minnesota for the Years 1890–91. Minneapolis: Harrison & Smith, Printers, 1893.

Certain Problems in Abdominal Surgery, Based on One Hundred Celiotomies done at the Kensington Hospital for Women. By Charles P. Noble, M.D. Reprinted from the Transactions of the Philadelphia County Medical Society, 1893.

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